# DVP-NS999ES

## RMT-D150A/D150P

# SERVICE MANUAL

*Self Diagnosis Supported model*

*US Model*
*Canadian Model*
*AEP Model*
*UK Model*
*Korean model*

Photo: Gold type

## SPECIFICATIONS

### System

**Laser:** Semiconductor laser

**Signal format system:**
NTSC: US, CND
PAL/(NTSC): AEP, UK, KR

### Audio characteristics

**Frequency response:** DVD VIDEO (PCM 96 kHz): 2 Hz to 44 kHz (44 kHz: –2 dB ±1 dB), Super Audio CD: 2 Hz to 100 kHz (50 kHz: –3 dB ±1 dB), CD: 2 Hz to 20 kHz (±0.5 dB)

**Harmonic distortion:** DVD VIDEO/Super Audio CD: 0.0012 %, CD: 0.0016 %

**Dynamic range:** DVD VIDEO/Super Audio CD: 103 dB, CD: 99 dB

**Wow and flutter:** Less than detected value (±0.001% W PEAK)

### Outputs

(**Jack name:** Jack type/Output level/Load impedance)

**AUDIO OUT 1/2:** Phono jack/2 Vrms/ 10 kilohms

**DIGITAL OUT (OPTICAL):** Optical output jack/–18 dBm (wave length: 660 nm)

**DIGITAL OUT (COAXIAL):** Phono jack/ 0.5 Vp-p/75 ohms

**5.1CH OUTPUT:** Phono jack/2 Vrms/ 10 kilohms

**COMPONENT VIDEO OUT(Y, $P_B$, $P_R$):** Phono jack/Y: 1.0 Vp-p/$P_B$, $P_R$: interlace*=0.648 Vp-p, progressive or interlace**=0.7 Vp-p/75 ohms

* BLACK LEVEL is ON
** BLACK LEVEL is OFF

**VIDEO OUT 1/2:** Phono jack/1.0 Vp-p/ 75 ohms

**S VIDEO OUT 1/2:** 4-pin mini DIN/Y: 1.0 Vp-p, C: 0.286 Vp-p/75 ohms

### General

**Power requirements:**
120 V AC, 60 Hz (US, CND)
220 V – 240 V AC, 50/60 Hz (AEP, UK, KR)

**Power consumption:**
20 W (US, CND)
23 W (AEP, UK, KR)

**Dimensions (approx.):**
430 × 113 × 349 mm (17 × 4 $^1/_2$ × 13 $^3/_4$ in.) (width/height/depth) incl. projecting parts

**Mass (approx.):**6.4 kg (14 lb 2 oz)

**Operating temperature:** 5 °C to 35 °C (41 °F to 95 °F)

**Operating humidity:** 25 % to 80 %

### Supplied accessories

Check that you have the following items:

- Audio/video cord (pinplug × 3 ⟷ pinplug × 3) (1)
- Power cord (1)
- Remote commander (remote) (1)
- Size AA (R6) batteries (2)

Specifications and design are subject to change without notice.

- Abbreviation
  CND : Canadian
  KR : Korea

DVD VIDEO™ SUPER AUDIO CD COMPACT disc DIGITAL VIDEO

## CD/DVD PLAYER

SONY®

# SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are “pinched” or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the line cord for cracks and abrasion. Recommend the replacement of any such line cord to the customer.
6. Check the B+ voltage to see it is at the values specified.
7. Check the antenna terminals, metal trim, “metallized” knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

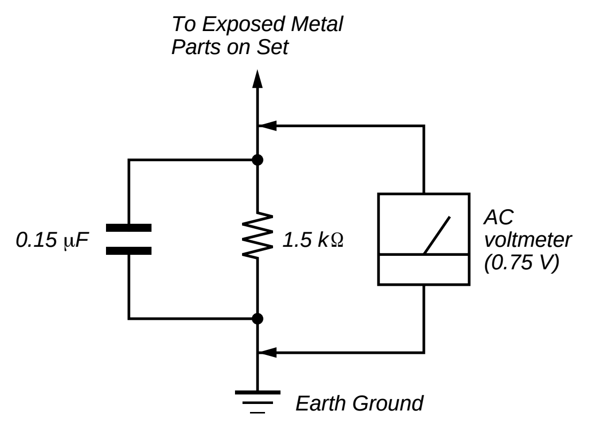


***Fig. A. Using an AC voltmeter to check AC leakage.***

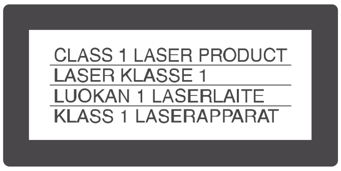
**WARNING!!**

**WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION, BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 25 cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.**

## LEAKAGE TEST

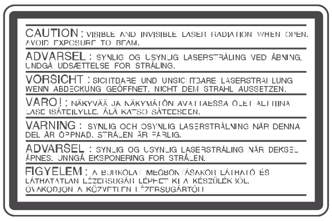
The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The “limit” indication is 0.75V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)



CLASS 1 LASER PRODUCT
LASER KLASSE 1
LUOKAN 1 LASERLAITE
KLASS 1 LASERAPPARAT

This appliance is classified as a CLASS 1 LASER product. The CLASS 1 LASER PRODUCT MARKING is located on the rear exterior.



CAUTION : VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM.

ADVARSEL : SYNLIG OG USYNLIG LASERSTRÅLING VED ÅBNING. UNDGÅ UDSÆTTELSE FOR STRÅLING.

VORSICHT : SICHTBARE UND UNSICHTBARE LASERSTRAHLUNG WENN ABDECKUNG GEÖFFNET. NICHT DEM STRAHL AUSSETZEN.

VARO! : NÄKYVÄÄ JA NÄKYMÄTÖN AVATTAESSA OLET ALTTIINA LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.

VARNING : SYNLIG OCH OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD. STRÅLEN ÄR FARLIG.

ADVARSEL : SYNLIG OG USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES. UNNGÅ EKSPONERING FOR STRÅLEN.

FIGYELEM : A BURKOLAT MEGBONTÁSAKOR LÁTHATÓ ÉS LÁTHATATLAN LÉZERSUGÁR LÉPHET KI A KÉSZÜLÉKBŐL. ÓVAKODJON A KÖZVETLEN LÉZERSUGÁRTÓL!

This label is located on the side of the player.

## CAUTION:

The use of optical instrument with this product will increase eye hazard.

CAUTION
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

**SAFETY-RELATED COMPONENT WARNING!!**

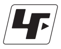
**COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.**

**ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!**

**LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.**

## Unleaded solder

Boards requiring use of unleaded solder are printed with the lead-free mark (LF) indicating the solder contains no lead.
(Caution: Some printed circuit boards may not come printed with the lead free mark due to their particular size.)



## : LEAD FREE MARK

Unleaded solder has the following characteristics.

- Unleaded solder melts at a temperature about 40°C higher than ordinary solder.
  Ordinary soldering irons can be used but the iron tip has to be applied to the solder joint for a slightly longer time.
  Soldering irons using a temperature regulator should be set to about 350°C.
  Caution: The printed pattern (copper foil) may peel away if the heated tip is applied for too long, so be careful!
- Strong viscosity
  Unleaded solder is more viscous (sticky, less prone to flow) than ordinary solder so use caution not to let solder bridges occur such as on IC pins, etc.
- Usable with ordinary solder
  It is best to use only unleaded solder but unleaded solder may also be added to ordinary solder.

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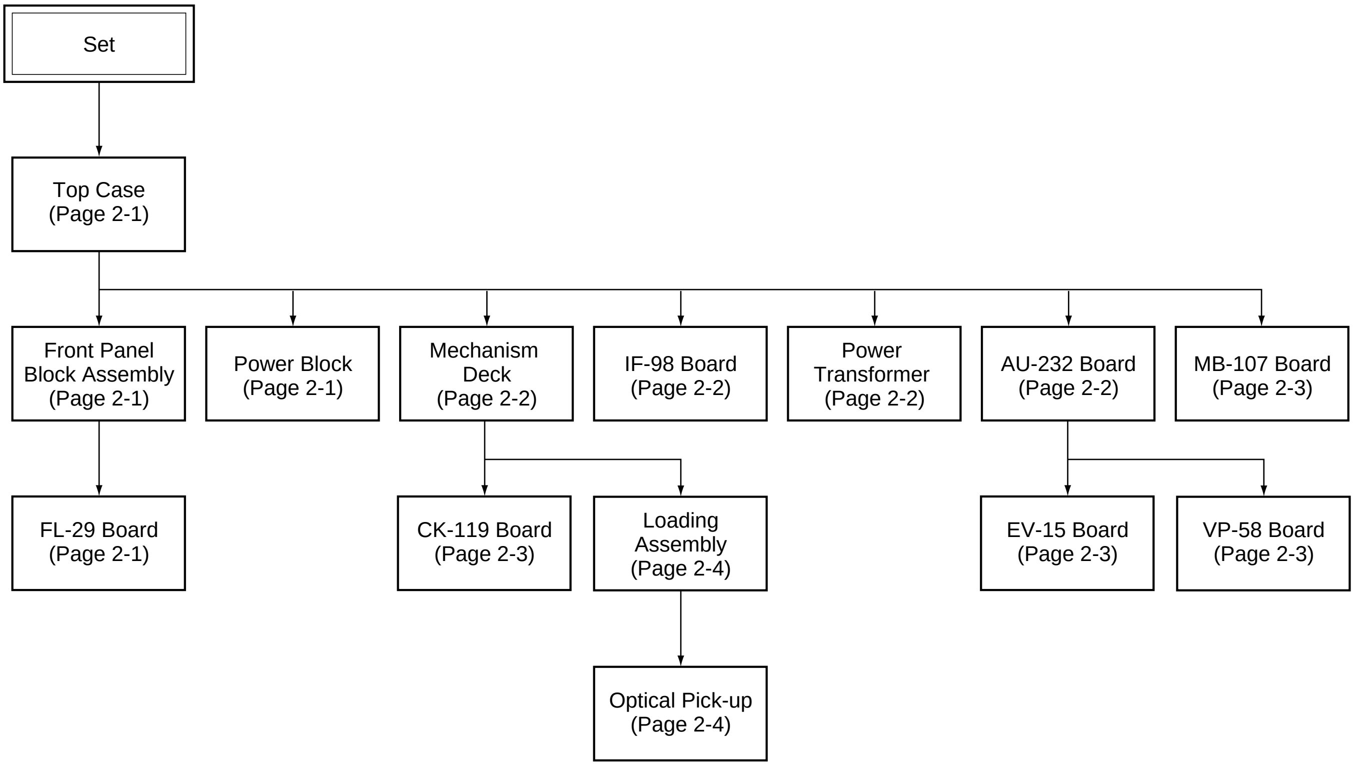
# SERVICE NOTE

## 1. DISASSEMBLY

- This set can be disassembled in the order shown below.


Set
Top Case (Page 2-1)
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# SECTION 1
# GENERAL

This section is extracted from instruction manual (3-077-160-11).

## Precautions

### On safety

- Caution – The use of optical instruments with this product will increase eye hazard.
- To prevent fire or shock hazard, do not place objects filled with liquids, such as vases, on the apparatus.
- Should any solid object or liquid fall into the cabinet, unplug the player and have it checked by qualified personnel before operating it any further.

### On power sources

- The player is not disconnected from the AC power source as long as it is connected to the wall outlet, even if the player itself has been turned off.
- If you are not going to use the player for a long time, be sure to disconnect the player from the wall outlet. To disconnect the AC power cord, grasp the plug itself; never pull the cord.
- Should the AC power cord need to be changed, have it done at a qualified service shop only.

### On placement

- Place the player in a location with adequate ventilation to prevent heat build-up in the player.
- Do not place the player on a soft surface such as a rug that might block the ventilation holes.
- Do not place the player in a location near heat sources, or in a place subject to direct sunlight, excessive dust, or mechanical shock.

### On operation

- If the player is brought directly from a cold to a warm location, or is placed in a very damp room, moisture may condense on the lenses inside the player. Should this occur, the player may not operate properly. In this case, remove the disc and leave the player turned on for about half an hour until the moisture evaporates.
- When you move the player, take out any discs. If you don’t, the disc may be damaged.

### On adjusting volume

Do not turn up the volume while listening to a section with very low level inputs or no audio signals. If you do, the speakers may be damaged when a peak level section is played.

### On cleaning

Clean the cabinet, panel, and controls with a soft cloth slightly moistened with a mild detergent solution. Do not use any type of abrasive pad, scouring powder or solvent such as alcohol or benzine.

### On cleaning discs

Do not use a commercially available cleaning disc. It may cause a malfunction.

**IMPORTANT NOTICE**

Caution: This player is capable of holding a still video image or on-screen display image on your television screen indefinitely. If you leave the still video image or on-screen display image displayed on your TV for an extended period of time you risk permanent damage to your television screen. Projection televisions are especially susceptible to this.

If you have any questions or problems concerning your player, please consult your nearest Sony dealer.

## Example of discs that the player cannot play

The player cannot play the following discs:

- All CD-ROMs (including PHOTO CDs)/ CD-Rs/CD-RWs other than those recorded in the following formats:
  - –music CD format
  - –video CD format
  - –MP3 format that conforms to ISO9660* Level 1/Level 2, or its extended format, Joliet
- Data part of CD-Extras
- DVD-ROMs
- DVD Audios

* A logical format of files and folders on CD-ROMs defined by ISO (International Standards Organization).

Also, the player cannot play the following discs:

- A DVD VIDEO with a different region code.
- A disc recorded in a color system other than NTSC, such as PAL or SECAM (this player conforms to the NTSC color system).
- A disc that has a non-standard shape (e.g., card, heart).
- A disc with paper or stickers on it.
- A disc that has the adhesive of cellophane tape or a sticker still left on it.

**Note**

Some DVD-Rs, DVD-RWs, CD-Rs, or CD-RWs cannot be played on this player due to the recording quality or physical condition of the disc, or the characteristics of the recording device.
The disc will not play if it has not been correctly finalized. Also, images in DVD-RWs with CPRM* protection may not be played if they contain a copy protection signal. “Copyright lock” appears on the screen. For more information, see the operating instructions for the recording device. Note that discs created in the Packet Write format cannot be played.

* CPRM (Content Protection for Recordable Media) is a coding technology that protects the copyright of images.

## Note on playback operations of DVDs and VIDEO CDs

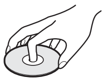
Some playback operations of DVDs and VIDEO CDs may be intentionally set by software producers. Since this player plays DVDs and VIDEO CDs according to the disc contents the software producers designed, some playback features may not be available. Also, refer to the instructions supplied with the DVDs or VIDEO CDs.

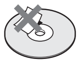
## Copyrights

This product incorporates copyright protection technology that is protected by method claims of certain U.S. patents, other intellectual property rights owned by Macrovision Corporation, and other rights owners. Use of this copyright protection technology must be authorized by Macrovision Corporation, and is intended for home and other limited viewing uses only unless otherwise authorized by Macrovision Corporation. Reverse engineering or disassembly is prohibited.

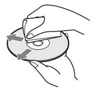
## Notes about the Discs

- To keep the disc clean, handle the disc by its edge. Do not touch the surface.





- Do not expose the disc to direct sunlight or heat sources such as hot air ducts, or leave it in a car parked in direct sunlight as the temperature may rise considerably inside the car.
- After playing, store the disc in its case.
- Clean the disc with a cleaning cloth. Wipe the disc from the center out.

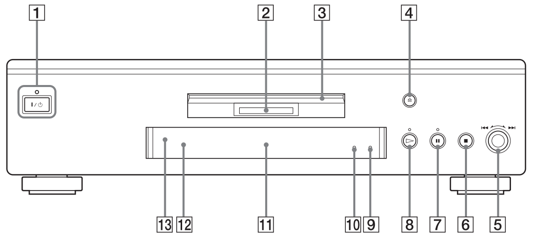


- Do not use solvents such as benzine, thinner, commercially available cleaners, or anti-static spray intended for vinyl LPs.

# Index to Parts and Controls

For more information, refer to the pages indicated in parentheses.

## Front panel


1
2
3
4
13 12
11
10 9
8
7
6
5

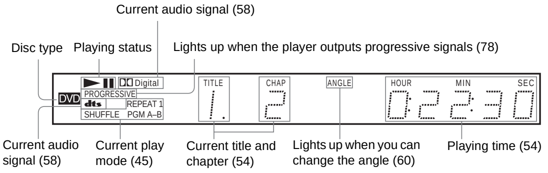
1 I/⏻ (on/standby) button/indicator (35)
Lights up in green when the power is on and lights up in red when the player is in standby mode.
2 MULTI CHANNEL indicator
Lights up when:
—playing a disc that contains three or more audio signal channels.
—no disc is inserted.
3 Disc tray (35)
4 ⏏ (open/close) button (35)
5 ⏮/⏭ (previous/next) dial (36)

6 ■ (stop) button (36)
7 ❚❚ (pause) button (36)
8 ▷ (play) button (35)
9 FL OFF indicator (10)
10 VIDEO OFF indicator (35)
11 Front panel display (10)
12 SUPER AUDIO CD indicator
Lights up when:
— playing an HD (High Density) layer of Super Audio CDs.
— no disc is inserted.
13 ▣ (remote sensor) (17)

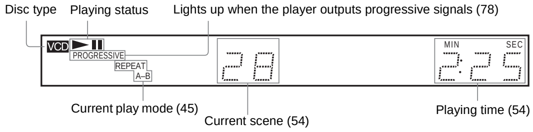
➜continued

## Front panel display

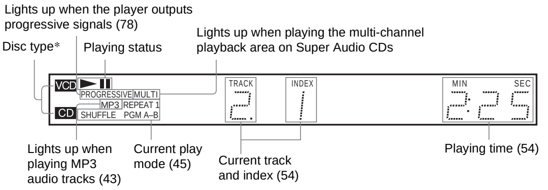
### When playing back a DVD VIDEO/DVD-RW


Current audio signal (58)
Disc type
Playing status
Lights up when the player outputs progressive signals (78)
DVD
Digital
PROGRESSIVE
REPEAT 1
SHUFFLE PGM A–B
TITLE
CHAP
ANGLE
HOUR MIN SEC
Current audio signal (58)
Current play mode (45)
Current title and chapter (54)
Lights up when you can change the angle (60)
Playing time (54)

### When playing back a VIDEO CD with Playback Control (PBC) (42)


Disc type
Playing status
Lights up when the player outputs progressive signals (78)
VCD
PROGRESSIVE
REPEAT
A–B
MIN SEC
Current play mode (45)
Current scene (54)
Playing time (54)

### When playing back a CD, Super Audio CD, DATA CD (MP3 audio), or VIDEO CD (without PBC)


Lights up when the player outputs progressive signals (78)
Lights up when playing the multi-channel playback area on Super Audio CDs
Disc type*
Playing status
VCD
CD
PROGRESSIVE MULTI
MP3 REPEAT 1
SHUFFLE PGM A–B
TRACK
INDEX
MIN SEC
Lights up when playing MP3 audio tracks (43)
Current play mode (45)
Current track and index (54)
Playing time (54)

* When playing the HD layer of Super Audio CDs, the disc type is not displayed.

**To turn off the front panel display**

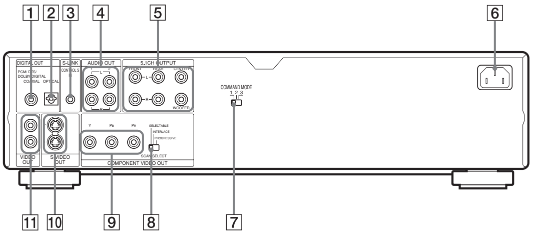
Toggle the scroll key up or down to display "FL ON/OFF" in the LCD screen. Then point the remote to the player and press down on the scroll key so that ⌔ appears in the LCD screen.

When the front panel display turns off, the FL OFF indicator lights up on the player.

**Hint**

You can adjust the lighting of the front panel display by setting "DIMMER" in "CUSTOM SETUP" (page 79).

## Rear panel

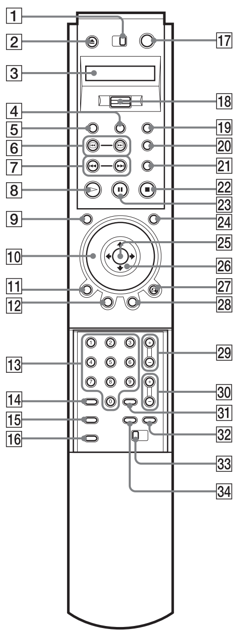

1
2
3
4
5
6
DIGITAL OUT
S-LINK
AUDIO OUT
5.1CH OUTPUT
COMMAND MODE
1 2 3
VIDEO OUT
S VIDEO OUT
COMPONENT VIDEO OUT
SCAN SELECT
11
10
9
8
7

1 DIGITAL OUT (COAXIAL) jack (27) (28) (29)
2 DIGITAL OUT (OPTICAL) jack (27) (28) (29)
3 S-LINK/CONTROL S IN jack (21)
4 AUDIO OUT L/R 1/2 jacks (26) (27) (28)
5 5.1CH OUTPUT jacks (29)
6 AC IN terminal (17)

7 COMMAND MODE switch (1, 2, 3) (17)
8 COMPONENT VIDEO OUT/SCAN SELECT switch (78)
9 COMPONENT VIDEO OUT (Y, $P_B$, $P_R$) jacks (21)
10 S VIDEO OUT 1/2 jacks (21)
11 VIDEO OUT 1/2 jacks (21)

➜continued

## Remote


1
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26
27
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29
30
31
32
33
34

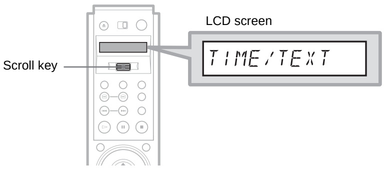
1 TV/DVD switch (72)
2 ⏏ OPEN/CLOSE button (35)
3 LCD (Liquid Crystal Display) screen (13)
4 PROGRAM button (45)
5 VIDEO CONTROL button (62)
6 ⏪/⏩ SEARCH buttons (37)
7 ⏮/⏭ PREV/NEXT (previous/next) buttons (36)
8 ▷ PLAY button (35)
The ▷ button has a tactile dot.*

9 PICTURE NAVI (picture navigation) button (50)
10 Click shuttle (37)
11 DISPLAY button (14)
12 TOP MENU button (39)
13 Number buttons (39)
The number 5 button has a tactile dot.*
14 CLEAR button (46)
15 SEARCH MODE button (49)
16 PICTURE MEMORY button (77)
17 I/⏻ (on/standby) button (35) (72)
18 Scroll key (13)
19 A-B button (48)
20 BOOKMARK button (51)
21 REPLAY button (36)
22 ■ STOP button (36)
23 ❚❚ PAUSE button (36)
24 JOG button (38)
25 ENTER button (31)
26 ←/↑/↓/→ button (39)
27 ↶ RETURN button (36)
28 MENU button (39)
29 CH (channel) +/– buttons (72)
The + button has a tactile dot.*
30 VOL (volume) +/– buttons (72)
The + button has a tactile dot.*
31 ENTER button
32 WIDE MODE button (72)
33 COMMAND MODE switch (DVD 1, 2, 3) (17)
34 TV/VIDEO button (72)

* Use the tactile dot as a reference when operating the player.

## Guide to the Remote Control LCD Screen

The supplied remote has an LCD (Liquid Crystal Display) screen and scroll key for controlling the player. By pushing the scroll key up or down, you can call up various displays and functions such as "TIME/TEXT" and "SUBTITLE."



### Operating the LCD and scroll key

**1 Toggle the scroll key up or down to select a command.**

The following commands are contained in the LCD. The commands will scroll continuously if you keep the scroll key pushed up or down. For details about each of the command, see the pages in parentheses.

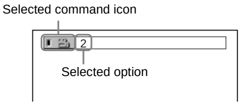
AUDIO (page 57) ↔ TIME/TEXT (page 53) ↔ VIDEO OFF (page 35)
↕ ↕
SUBTITLE (page 61) FL ON/OFF (page 10)
↕ ↕
ANGLE (page 60) MULTI/2CH (page 41)
↕ ↕
SURROUND (page 59) SACD*/CD (page 41)
↕ ↕
SHUFFLE (page 46) ←——————→ REPEAT (page 47)

* Super Audio CD.

**2 Point the remote at the ℝ (remote sensor) on the player and press down on the word PUSH imprinted on the scroll key so that ᯤ appears in the LCD screen.**

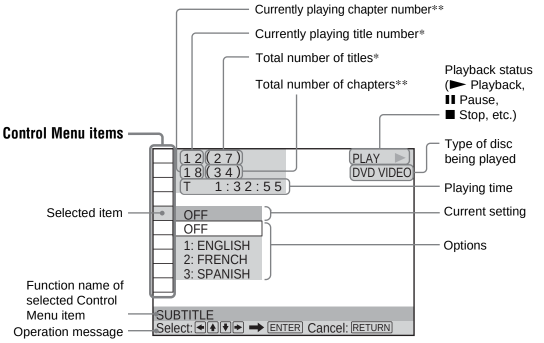
The player will respond to the selected command as long as the command remains in the LCD screen. Some commands require you to press down on the scroll key repeatedly. The display appears on the TV screen.

Example: When "ANGLE" is selected.



## Guide to the Control Menu Display

You can use the Control Menu to select a function and view related information. The Control Menu display shows different items depending on the disc type.
Example: Control Menu display 1 when playing a DVD VIDEO.



* Displays the scene number for VIDEO CDs (PBC is on), track number for VIDEO CDs/ Super audio CDs/CDs, album number for DATA CDs.

** Displays the index number for VIDEO CDs/ Super audio CDs/CDs, MP3 audio track number for DATA CDs.

### Using the Control Menu display

**1 Press DISPLAY repeatedly to turn on or change the Control Menu display as follows:**

→ Control Menu display 1
↓
Control Menu display 2 (DVD/VIDEO CD only)
↓
ADVANCED display (DVD only. See page 55.)
↓
Control Menu display off

**2 Select the Control Menu item you want to set up for the current disc using ↑/↓, and press ENTER.**

Available options for the selected Control Menu item appear.

**3 Select the option you want by pressing ↑/↓, and press ENTER.**

**Hint**

You can skip the ADVANCED display by setting "OFF" under "ADVANCED" in the Control Menu (page 55).

**List of Control Menu items**

Following are brief explanations on the Control Menu items. Available options for each item are described on the pages in parentheses.

| Item | Item Name, Function, Relevant Disc Type |
|---|---|
| | **TITLE (page 49)/SCENE (page 49)/TRACK (page 49)**<br>Selects the title, scene, or track to be played. DVD-V DVD-RW VCD |
| | **CHAPTER (page 49)/INDEX (page 49)**<br>Selects the chapter or index to be played. DVD-V DVD-RW VCD |
| | **ALBUM (page 43)**<br>Selects the album to be played. DATA CD |
| | **TRACK (page 49)**<br>Selects the track to be played. SA-CD CD DATA CD |
| | **INDEX (page 49)**<br>Selects the index to be played. SA-CD CD |
| | **ORIGINAL/PLAY LIST (page 40)**<br>Selects the type of titles to be played, the ORIGINAL one or an edited PLAY LIST. DVD-RW |
| | **TIME/TEXT (page 49, 53)**<br>**TIME/MEMO (page 49, 66)**<br>Checks the elapsed time and the remaining playback time.<br>Input the time code for picture and music searching.<br>Displays the DVD/Super Audio CD/CD text, or the DATA CD's track name.<br>Allows you to name a disc, or displays the label (Disc Memo) you assigned to the disc. DVD-V DVD-RW VCD SA-CD CD DATA CD |
| CH | **MULTI/2CH (page 41)**<br>Selects the playback area on Super Audio CDs when available. SA-CD |
| | **AUDIO (page 57)**<br>Changes the audio setting. DVD-V DVD-RW VCD CD DATA CD |
| | **SUBTITLE (page 61)**<br>Displays the subtitles.<br>Changes the subtitle language. DVD-V DVD-RW |
| | **ANGLE (page 60)**<br>Changes the angle. DVD-V |
| | **SURROUND (page 59)**<br>Selects the surround functions. Available when 4 to 6 speakers are connected. DVD-V DVD-RW VCD CD DATA CD |
| | **ADVANCED (page 55)**<br>Displays the information (bit rate or layer) of the disc currently playing. DVD-V DVD-RW |
| | **PARENTAL CONTROL (page 67)**<br>Set to prohibit playback on this player. DVD-V VCD SA-CD CD |

➡continued

| | |
|---|---|
| | **SETUP (page 75)**<br>QUICK Setup (page 31)<br>Use Quick Setup to choose the desired language of the on-screen display, the aspect ratio of the TV, the audio output signal, and the size of the speakers you are using.<br>CUSTOM Setup<br>In addition to the Quick Setup setting, you can adjust various other settings.<br>RESET<br>Returns the settings in "SETUP" to the default setting. DVD-V DVD-RW VCD SA-CD CD DATA CD |
| | **PROGRAM (page 45)**<br>Selects the title, chapter, or track to play in the order you want. DVD-V VCD SA-CD CD |
| | **SHUFFLE (page 46)**<br>Plays the title, chapter, or track in random order. DVD-V VCD SA-CD CD |
| | **REPEAT (page 47)**<br>Plays the entire disc (all titles/all tracks/all albums) repeatedly or one title/chapter/track/album repeatedly. DVD-V DVD-RW VCD SA-CD CD DATA CD |
| A-B | **A-B REPEAT (page 48)**<br>Specifies the parts you want to play repeatedly. DVD-V DVD-RW VCD SA-CD CD |
| | **VIDEO CONTROL (page 62)**<br>Adjusts the video signal from the player in various ways.<br>Select the setting that suits the program you are watching. Or, make detailed adjustments to each element of the picture qualities, such as brightness, color, noise, sharpness, and many others. DVD-V DVD-RW VCD |
| | **PICTURE NAVIGATION (page 50)**<br>Divides the screen into 9 subscreens to help you find the scene you want quickly. DVD-V VCD |

**Hint**

The Control Menu icon indicator lights up in green → when you select any item except "OFF." ("SURROUND," "PROGRAM," "SHUFFLE," "REPEAT," "A-B REPEAT" only). The "ANGLE" indicator lights up in green only when the angles can be changed. The "VIDEO CONTROL" indicator lights up in green when any setting other than "STANDARD" is selected. The "PICTURE NAVIGATION" indicator lights up in green when a bookmark is set.

## Quick Overview

A quick overview presented in this guide will give you enough information to start using the player for your enjoyment. To use the surround sound features of this player, refer to “Hookups” on page 21.

**Notes**

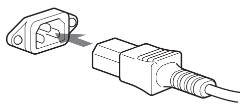
- You cannot connect this player to a TV that does not have a video input jack.
- Be sure to disconnect the power cord of each component before connecting.

## Step 1: Unpacking

Check that you have the following items:
- Audio/video cord (pinplug × 3 ⟷ pinplug × 3) (1)
- Power cord (1)
- Remote commander (remote) (1)
- Size AA (R6) batteries (2)

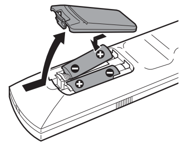
### Connecting the power cord

Connect the supplied power cord to the AC IN terminal of the player.



## Step 2: Preparing the Remote

You can control the player using the supplied remote. Insert two Size AA (R6) batteries by matching the ⊕ and ⊖ ends on the batteries to the markings inside the compartment. When using the remote, point it at the remote sensor 🅁 on the player.

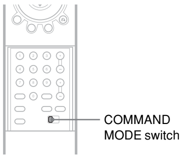


**Notes**

- Do not leave the remote in an extremely hot or humid place.
- Do not drop any foreign object into the remote casing, particularly when replacing the batteries.
- Do not expose the remote sensor to direct light from the sun or a lighting apparatus. Doing so may cause a malfunction.
- If you do not use the remote for an extended period of time, remove the batteries to avoid possible damage from battery leakage and corrosion.

### When you have more than one Sony DVD player

If the supplied remote interferes with your other Sony DVD player, set the command mode for this player and the supplied remote to one that differs from the other Sony DVD player.
The default command mode setting for this player and the supplied remote is DVD 1.



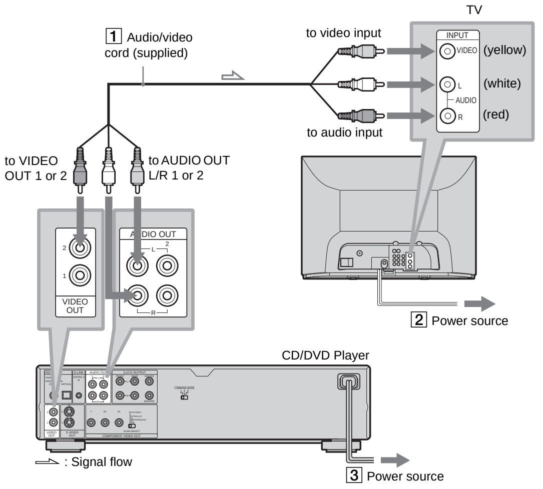
➡continued

1 **Slide the COMMAND MODE switch on the remote to select the command mode (DVD 1, DVD 2, or DVD 3) so that the setting for the remote differs from the other DVD players.**
For example, if other DVD players respond to the default command mode setting for the supplied remote (DVD 1), set the remote to DVD 2 or DVD 3.

2 **Slide the COMMAND MODE switch on the rear of the player so it matches that of the supplied remote.**

## Step 3: TV Hookups

Connect the supplied audio/video cord and the power cords in the order (1~3) shown below. Be sure to connect the power cord last.

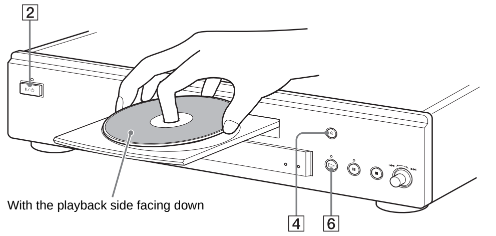


**To change the aspect ratio for the connected TV**
Depending on the disc and the TV type (standard 4:3 screen TV or wide screen TV), the image may not fit the TV screen.
If this happens, change the aspect ratio (page 77).

**When connecting to a TV that accepts progressive (480p) format signals**
You need to use the COMPONENT VIDEO OUT jacks to view progressive signals. Hook up your TV using pattern C on page 21, and then run Quick Setup on page 31.

**Hint**
When connecting to a monaural TV, use a stereo-mono conversion cord (not supplied). Connect the VIDEO OUT 1/2 jack on the player to the TV’s video input jack, and connect the AUDIO OUT L/R 1/2 jacks to the TV’s audio input jack.

## Step 4: Playing a Disc



1 **Turn on the TV.**

2 **Press I/⏻ on the player.**

3 **Switch the input selector on your TV so that the signal from the player appears on the TV screen.**

4 **Press ≜ on the player to open the disc tray.**

5 **Place the disc on the tray with the playback side facing down.**

6 **Press ▷.**
The disc tray closes and the player begins playing the disc.

**After step 6**
Depending on the disc, a menu may be displayed on the TV screen. If so, select the item you want from the menu and play the DVD VIDEO (page 39) or VIDEO CD (page 42).

**To stop playing**
Press ■.

**To remove the disc**
Press ≜.

**To turn off the player**
Press I/⏻. The player enters standby mode and the power indicator lights up in red.

# Hooking Up the Player

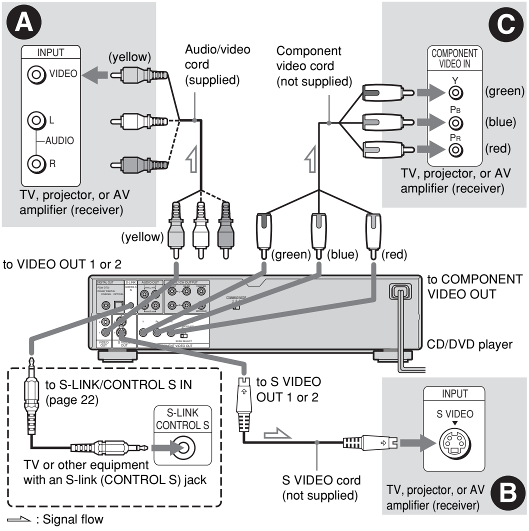
Follow steps 1 to 4 to hook up and adjust the settings of the player.
Before you start, disconnect the power cords, check that you have all of the supplied accessories, and insert the batteries into the remote (page 17).

**Notes**

- Plug cords securely to prevent unwanted noise.
- Refer to the instructions supplied with the components to be connected.

## Step 1: Connecting the Video Cords

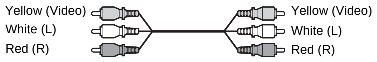
Connect this player to your TV monitor, projector, or AV amplifier (receiver) using a video cord. Select one of the patterns Ⓐ through Ⓒ, according to the input jack on your TV monitor, projector, or AV amplifier (receiver). In order to view progressive signal (480p) pictures with a compatible TV, projector, or monitor, you must use pattern Ⓒ.


A
INPUT
VIDEO
L
AUDIO
R
(yellow)
Audio/video cord (supplied)
TV, projector, or AV amplifier (receiver)
(yellow)
to VIDEO OUT 1 or 2
Component video cord (not supplied)
C
COMPONENT VIDEO IN
Y
PB
PR
(green)
(blue)
(red)
TV, projector, or AV amplifier (receiver)
(green)
(blue)
(red)
to COMPONENT VIDEO OUT
CD/DVD player
to S-LINK/CONTROL S IN (page 22)
S-LINK CONTROL S
TV or other equipment with an S-link (CONTROL S) jack
to S VIDEO OUT 1 or 2
S VIDEO cord (not supplied)
INPUT
S VIDEO
TV, projector, or AV amplifier (receiver)
B
: Signal flow

➡continued

### Ⓐ If you are connecting to a video input jack

Connect the yellow plug of the audio/video cord (supplied) to the yellow (video) jacks. You will enjoy standard quality images.


Yellow (Video)
White (L)
Red (R)
Yellow (Video)
White (L)
Red (R)

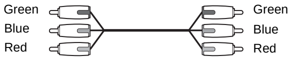
Use the red and white plugs to connect to the audio input jacks (page 26). (Do this if you are connecting to a TV only.)

### Ⓑ If you are connecting to an S VIDEO input jack

Connect an S VIDEO cord (not supplied). You will enjoy high quality images.

### Ⓒ If you are connecting to a monitor, projector, or AV amplifier (receiver) having component video input jacks (Y, PB, PR)

Connect the component via the COMPONENT VIDEO OUT jacks using a component video cord (not supplied) or three video cords (not supplied) of the same kind and length. You will enjoy accurate color reproduction and high quality images. If your TV accepts progressive (480p) format signals, you must use this connection and set “COMPONENT OUT” to “PROGRESSIVE” in “SCREEN SETUP” (page 78).

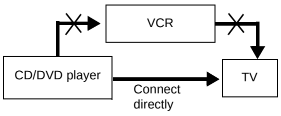

Green
Blue
Red
Green
Blue
Red

**Hint**

If your TV has an S-LINK (CONTROL S) jack, you can control the player by operating the remote toward the TV. This feature is convenient when you placed the player and the TV away from each other. After connecting the player with other components according to the above Ⓐ, Ⓑ, or Ⓒ, connect the TV via the S-LINK/CONTROL S IN jack using an S-link (control S) cord (not supplied). Refer to the instructions supplied with the TV to be connected.

**Notes**

- Do not connect a VCR, etc. between your TV and the player. If you pass the player signals via the VCR, you may not receive a clear image on the TV screen. If your TV has only one audio/video input jack, connect the player to this jack.


VCR
CD/DVD player
TV
Connect directly

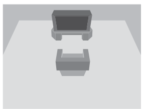
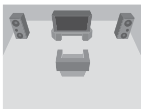
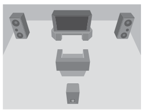
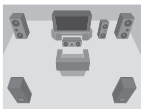
- Consumers should note that not all high definition television sets are fully compatible with this product and may cause artifacts to be displayed in the picture. In the case of progressive scan picture problems, it is recommended that you switch the connection to the standard definition output. If there are questions regarding your Sony TV set’s compatibility with this DVD player, please contact our customer service center.

## Step 2: Connecting the Audio Cords

Refer to the chart below to select the connection that best suits your system. Be sure to also read the instructions for the components you wish to connect.

### Select a connection

Select one of the following connections, Ⓐ through Ⓓ.

| Components to be connected | Connection | Your setup (example) |
|---|---|---|
| **TV**<br>• Surround effects: None | Ⓐ (page 26) |  |
| **Stereo amplifier (receiver) and two speakers**<br>• Surround effects: None<br>or<br>**MD deck/DAT deck**<br>• Surround effects: None | Ⓑ (page 27) |  |
| **AV amplifier (receiver) having a Dolby* Surround (Pro Logic) decoder and 3 to 6 speakers**<br>• Surround effects: Dolby Surround (Pro Logic) (page 88) | Ⓒ (page 28) |  |
| **AV amplifier (receiver) with 5.1 ch input jacks and 4 to 6 speakers**<br>• Surround effects:<br>– Dolby Digital (5.1 ch) (page 88)<br>– DTS (5.1 ch) (page 88)<br>– Super Audio CD Multi channel (page 90)<br>or<br>**AV amplifier (receiver) with digital input jacks having a Dolby or DTS** decoder and 6 speakers**<br>• Surround effects:<br>– Dolby Digital (5.1ch) (page 88)<br>– DTS (5.1ch) (page 88) | Ⓓ (page 29) |  |

**Hint**

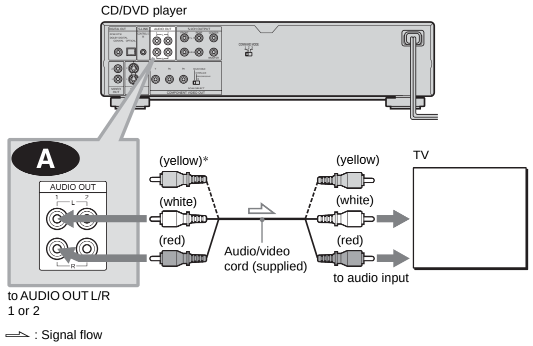
If you connect an AV amplifier (receiver) that conforms to the 96 kHz sampling frequency, use connection **D**.

* Manufactured under license from Dolby Laboratories. "Dolby," "Pro Logic," and the double-D symbol are trademarks of Dolby Laboratories.

** Manufactured under license from Digital Theater Systems, Inc. US Pat. No. 5,451,942, 5,956,674, 5,974,380, 5,978,762 and other world-wide patents issued and pending. "DTS" and "DTS Digital Surround" are registered trademarks of Digital Theater Systems, Inc. Copyright 1996, 2000 Digital Theater Systems, Inc. All rights reserved.

## A Connecting to your TV

This connection will use your TV speakers for sound.


CD/DVD player
A
AUDIO OUT
1
2
L
R
(yellow)*
(white)
(red)
Audio/video cord (supplied)
(yellow)
(white)
(red)
TV
to audio input
to AUDIO OUT L/R 1 or 2
: Signal flow

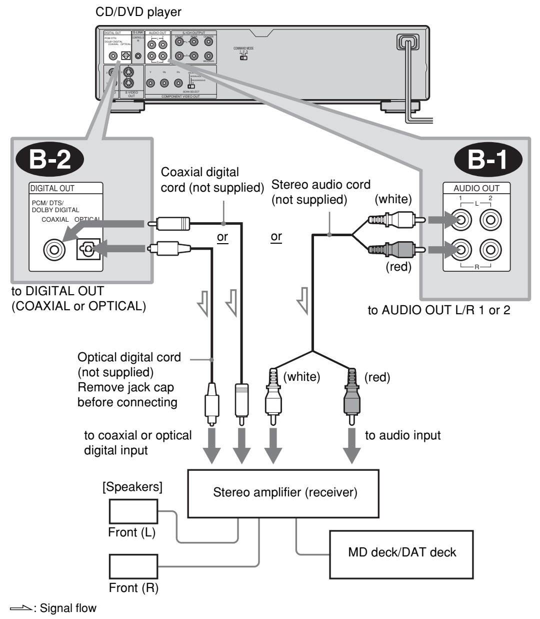
* The yellow plug is used for video signals (page 21).

**Hint**

When connecting to a monaural TV, use a stereo-mono conversion cord (not supplied). Connect the AUDIO OUT L/R 1/2 jacks to the TV's audio input jack.

## B Connecting to a stereo amplifier (receiver) and 2 speakers/Connecting to an MD deck or DAT deck

If the stereo amplifier (receiver) has audio input jacks L and R only, use **B-1**. If the amplifier (receiver) has a digital input jack, or when connecting to an MD deck or DAT deck, use **B-2**. In this case, you can also connect the player directly to the MD deck or DAT deck without using your stereo amplifier (receiver).


CD/DVD player
B-2
DIGITAL OUT
PCM/ DTS/ DOLBY DIGITAL
COAXIAL OPTICAL
to DIGITAL OUT (COAXIAL or OPTICAL)
Coaxial digital cord (not supplied)
or
Stereo audio cord (not supplied)
or
(white)
(red)
B-1
AUDIO OUT
1
2
L
R
to AUDIO OUT L/R 1 or 2
Optical digital cord (not supplied) Remove jack cap before connecting
(white)
(red)
to coaxial or optical digital input
to audio input
[Speakers]
Stereo amplifier (receiver)
Front (L)
Front (R)
MD deck/DAT deck
: Signal flow

**Hints**

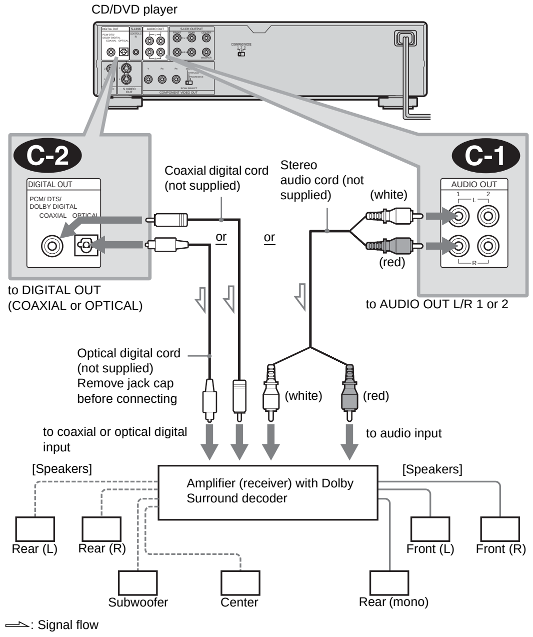
- In connection **B-1**, you can use the supplied audio/video cord instead of using a separate stereo audio cord.
- To realize better surround sound effects, make sure that your listening position is in between your speakers.

**Note**

Super Audio CD audio signals are not output from the digital jack.

## C Connecting to an AV amplifier (receiver) having a Dolby Surround (Pro Logic) decoder and 3 to 6 speakers

You can enjoy Dolby Surround effects only when playing Dolby Surround audio or multi-channel audio (Dolby Digital) discs.
If your amplifier (receiver) has L and R audio input jacks only, use **C-1**. If your amplifier (receiver) has a digital input jack, use **C-2**.


CD/DVD player
C-2
DIGITAL OUT
PCM/ DTS/ DOLBY DIGITAL
COAXIAL OPTICAL
to DIGITAL OUT (COAXIAL or OPTICAL)
Coaxial digital cord (not supplied)
or
Stereo audio cord (not supplied)
or
(white)
(red)
C-1
AUDIO OUT
1
2
L
R
to AUDIO OUT L/R 1 or 2
Optical digital cord (not supplied) Remove jack cap before connecting
(white)
(red)
to coaxial or optical digital input
to audio input
[Speakers]
Amplifier (receiver) with Dolby Surround decoder
[Speakers]
Rear (L)
Rear (R)
Front (L)
Front (R)
Subwoofer
Center
Rear (mono)
: Signal flow

**Hint**

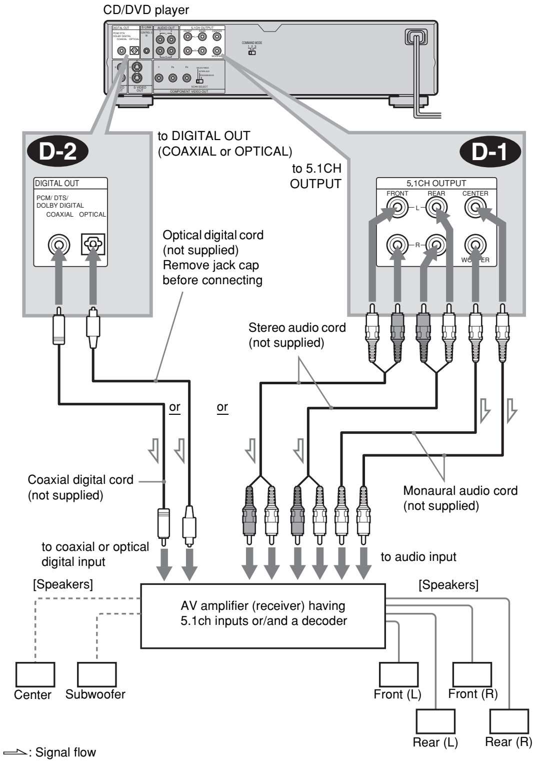
For correct speaker location, refer to the operating instructions of the amplifier (receiver).

**Notes**

- When connecting 6 speakers, replace the monaural rear speaker with a center speaker, 2 rear speakers, and a subwoofer.
- Super Audio CD audio signals are not output from the digital jack.

## D Connecting to an AV amplifier (receiver) with 5.1 ch input jacks and/or a digital input jack and 4 to 6 speakers

If your AV amplifier (receiver) has 5.1 channel inputs, use D-1.
If you want to use the Dolby Digital, or DTS decoder function on your AV amplifier (receiver), connect to its digital jack using D-2. With the following connections, you can enjoy a more realistic audio presence in the comfort of your own home.


CD/DVD player
D-2
D-1
to DIGITAL OUT
(COAXIAL or OPTICAL)
to 5.1CH
OUTPUT
DIGITAL OUT
PCM/ DTS/
DOLBY DIGITAL
COAXIAL OPTICAL
5.1CH OUTPUT
FRONT
REAR
CENTER
L
R
WOOFER
Optical digital cord
(not supplied)
Remove jack cap
before connecting
Stereo audio cord
(not supplied)
or
or
Coaxial digital cord
(not supplied)
Monaural audio cord
(not supplied)
to coaxial or optical
digital input
to audio input
[Speakers]
[Speakers]
AV amplifier (receiver) having
5.1ch inputs or/and a decoder
Center
Subwoofer
Front (L)
Front (R)
Rear (L)
Rear (R)
: Signal flow

### D-1: Connecting to the 5.1ch input jacks

You can enjoy 5.1ch surround sound using the internal Dolby Digital, DTS, or Super Audio CD Multi decoder of this player.

### D-2: Connecting to a digital jack

This connection will allow you to use the Dolby Digital, or DTS decoder function of your AV amplifier (receiver). You are not able to enjoy the surround sound effects of this player.

**Hints**

- **For connection D-2**
  For correct speaker placement, refer to the instructions of the connected components.
- To enhance the sound performance:
  - Use high-performance speakers.
  - Use front, rear, and center speakers of the same size and performance.
  - Place the subwoofer between the left and right front speakers.

**Notes**

**For connection D-2**

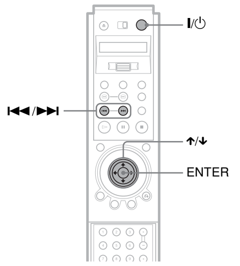
- After you have completed the connection, be sure to set "DOLBY DIGITAL" to "DOLBY DIGITAL" and "DTS" to "DTS" in Quick Setup (page 31).
- When you connect an amplifier (receiver) that conforms to the 96kHz sampling frequency, set "48kHz/96kHz PCM" in "AUDIO SETUP" to "96kHz/24bit" (page 82).
- Super Audio CD audio signals are not output from the digital jack.

## Step 3: Connecting the Power Cord

Plug the player and TV power cords into an AC outlet.

## Step 4: Quick Setup

Follow the steps below to make the minimum number of basic adjustments for using the player. To skip an adjustment, press ►►I. To return to the previous adjustment, press I◄◄.



**1 Turn on the TV.**

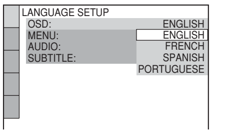
**2 Press I/⏻.**

**3 Switch the input selector on your TV so that the signal from the player appears on the TV screen.**

"Press [ENTER] to run QUICK SETUP" appears at the bottom of the screen. If this message does not appear, select "QUICK" under "SETUP" in the Control Menu to run Quick Setup (page 76).

**4 Press ENTER without inserting a disc.**

The Setup Display for selecting the language used in the on-screen display appears.



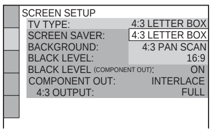
```
LANGUAGE SETUP
 OSD:                 ENGLISH
 MENU:                ENGLISH
 AUDIO:                FRENCH
 SUBTITLE:            SPANISH
                   PORTUGUESE
```

**5 Press ↑/↓ to select a language.**

The player uses the language selected here to display the menu and subtitles as well.

**6 Press ENTER.**

The Setup Display for selecting the aspect ratio of the TV to be connected appears.



```
SCREEN SETUP
 TV TYPE:                         4:3 LETTER BOX
 SCREEN SAVER:                    4:3 LETTER BOX
 BACKGROUND:                        4:3 PAN SCAN
 BLACK LEVEL:                               16:9
 BLACK LEVEL (COMPONENT OUT):                 ON
 COMPONENT OUT:                        INTERLACE
   4:3 OUTPUT:                              FULL
```

**7 Press ↑/↓ to select the setting that matches your TV type.**

**◆ If you have a 4:3 standard TV**

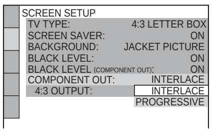
- 4:3 LETTER BOX or 4:3 PAN SCAN (page 77)

**◆ If you have a wide-screen TV or a 4:3 standard TV with a wide-screen mode**

- 16:9 (page 77)

**8 Press ENTER.**

The Setup Display for selecting the type of video signal appears.



```
SCREEN SETUP
 TV TYPE:                         4:3 LETTER BOX
 SCREEN SAVER:                                ON
 BACKGROUND:                      JACKET PICTURE
 BLACK LEVEL:                                 ON
 BLACK LEVEL (COMPONENT OUT):                 ON
 COMPONENT OUT:                        INTERLACE
   4:3 OUTPUT:                         INTERLACE
                                     PROGRESSIVE
```

**9 Press ↑/↓ to select the type of signals you wish to output to your TV.**

Select "PROGRESSIVE" only if you have made video pattern C (page 21) and wish to view progressive video signals.

**◆ Interlace format TV (standard TV)**

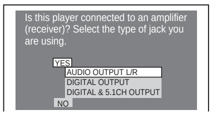
- INTERLACE (pages 78)

**◆ Progressive format TV**

- PROGRESSIVE (pages 78)

**10 Press ENTER.**

The Setup Display for selecting the type of jack used to connect your amplifier (receiver) appears.



```
Is this player connected to an amplifier
(receiver)? Select the type of jack you
are using.

      YES
        AUDIO OUTPUT L/R
        DIGITAL OUTPUT
        DIGITAL & 5.1CH OUTPUT
      NO
```

**11 Press ↑/↓ to select the type of jack (if any) you are using to connect to an amplifier (receiver), then press ENTER.**

Choose the item that matches the audio connection you selected on pages 26 to 29 (A through D).

**A**

- If you connect just a TV and nothing else, select "NO." Quick Setup is finished and connections are complete.

**B-1 C-1**

- Select "AUDIO OUTPUT L/R." Quick Setup is finished and connections are complete.

**B-2 C-2 D-2**

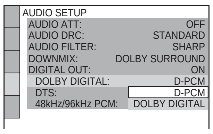
- Select "DIGITAL OUTPUT." The Setup Display for "DOLBY DIGITAL" appears.

**D-1 or both D-1 and D-2**

- Select "DIGITAL & 5.1CH OUTPUT." The Setup Display for "DOLBY DIGITAL" appears.

**12 Press ↑/↓ to select the type of Dolby Digital signal you wish to send to your amplifier (receiver).**

Choose the signal that matches the audio connection you selected on pages 27 to 29 (B through D).



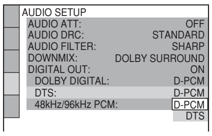
```
AUDIO SETUP
 AUDIO ATT:                           OFF
 AUDIO DRC:                      STANDARD
 AUDIO FILTER:                      SHARP
 DOWNMIX:                 DOLBY SURROUND
 DIGITAL OUT:                          ON
   DOLBY DIGITAL:                   D-PCM
   DTS:                             D-PCM
   48kHz/96kHz PCM:         DOLBY DIGITAL
```

**B-2** **C-2**
- D-PCM (page 81)

**D-2**
- DOLBY DIGITAL (only if the amplifier (receiver) has a Dolby Digital decoder) (page 81)

### 13 Press ENTER.

"DTS" is selected.



AUDIO SETUP
AUDIO ATT: OFF
AUDIO DRC: STANDARD
AUDIO FILTER: SHARP
DOWNMIX: DOLBY SURROUND
DIGITAL OUT: ON
DOLBY DIGITAL: D-PCM
DTS: D-PCM
48kHz/96kHz PCM: D-PCM
DTS

### 14 Press ↑/↓ to select the type of DTS signal sent to your amplifier (receiver).

Choose the item that matches the audio connection you selected on pages 27 to 29 (**B** through **D**).

**B-2** **C-2**
- D-PCM (page 82)

**D-2**
- DTS (only if the amplifier (receiver) has a DTS decoder) (page 82)

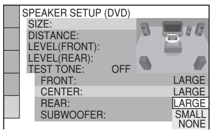
### 15 Press ENTER.

**◆ When "DIGITAL OUTPUT" is selected in step 11**
- Quick Setup is finished and connections are complete.

**◆ When "DIGITAL & 5.1CH OUTPUT" is selected in step 11**
- The Setup Display for "SPEAKER SETUP" appears.

### 16 Press ↑/↓ to select the size of the center speaker.

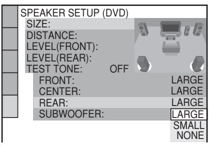
If no center speaker is connected, select "NONE" (page 83).



SPEAKER SETUP (DVD)
SIZE:
DISTANCE:
LEVEL(FRONT):
LEVEL(REAR):
TEST TONE: OFF
FRONT: LARGE
CENTER: LARGE
REAR: LARGE
SUBWOOFER: SMALL
NONE

### 17 Press ENTER.

"REAR" is selected.



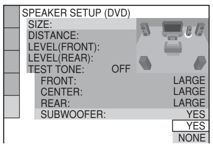
SPEAKER SETUP (DVD)
SIZE:
DISTANCE:
LEVEL(FRONT):
LEVEL(REAR):
TEST TONE: OFF
FRONT: LARGE
CENTER: LARGE
REAR: LARGE
SUBWOOFER: LARGE
SMALL
NONE

### 18 Press ↑/↓ to select the size of the rear speakers.

If no rear speaker is connected, select "NONE."

### 19 Press ENTER.

"SUBWOOFER" is selected.



SPEAKER SETUP (DVD)
SIZE:
DISTANCE:
LEVEL(FRONT):
LEVEL(REAR):
TEST TONE: OFF
FRONT: LARGE
CENTER: LARGE
REAR: LARGE
SUBWOOFER: YES
YES
NONE

### 20 Press ↑/↓ to select whether or not you have connected a subwoofer.

### 21 Press ENTER.

Quick Setup is finished. All connections and setup operations are complete.

➡continued

## Enjoying the surround sound effects

To enjoy the surround sound effects of this player or your amplifier (receiver), set the following items as described below for the audio connection you selected on pages 27 to 29 (**B** through **D**). Each of these is the default setting and does not need to be adjusted when you first connect the player. Refer to page 75 for using the Setup Display.

### Audio Connection (pages 26 to 29)

**A**
- No additional settings are needed.

**B-1** **C-1**
- Set "DOWNMIX" to "DOLBY SURROUND" (page 81).

**B-2** **C-2** **D-2**
- Set "DOWNMIX" to "DOLBY SURROUND" (page 81).
- Set "DIGITAL OUT" to "ON" (page 81).

**D-1**
- Set "DISTANCE," "LEVEL (FRONT)," and "LEVEL (REAR)" according to the connected speakers (page 83).

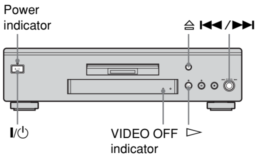
**Hints**
- **For connections B-1 C-1 D-1**
  If the sound distorts even when the volume is turned down, set "AUDIO ATT" to "ON" (page 80).
- **For connections B-2 C-2 D-2**
  Set "48kHz/96kHz PCM" to "96kHZ/24bit" only if you connect an amplifier (receiver) that conforms to the 96 kHz sampling frequency (page 82).

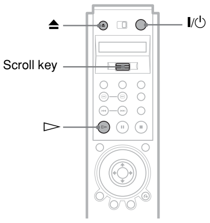
---

# Playing Discs DVD-V

DVD-RW VCD SA-CD CD
DATA CD

Depending on the DVD or VIDEO CD, some operations may be different or restricted. Refer to the operating instructions supplied with your disc.





### 1 Turn on your TV.

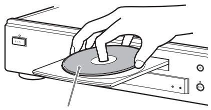
### 2 Press I/⏻.

The player turns on and the power indicator lights up in green.

### 3 Switch the input selector on your TV so that the signal from the player appears on the TV screen.

**◆ When using an amplifier (receiver)**
Turn on the amplifier (receiver) and select the appropriate channel so that you can hear sound from the player.

### 4 Press ⏏ on the player, and place a disc on the disc tray.


With the playback side facing down

### 5 Press ▷.

The disc tray closes, and the player starts playback (continuous play). Adjust the volume on the TV or the amplifier (receiver).
Depending on the disc, a menu may appear on the TV screen. For DVD VIDEOs, see page 39. For VIDEO CDs, see page 42.

---

#### To enjoy the clarity of Super Audio CD/CD sound more

You can minimize the effect of the video output by switching it off.
Toggle the scroll key up or down to display "VIDEO OFF" in the LCD screen. Then point the remote to the player and press down on the scroll key once so that 📶 appears in the LCD screen.
When no video signal is output from the player, the VIDEO OFF indicator lights up on the player.

#### To turn off the player

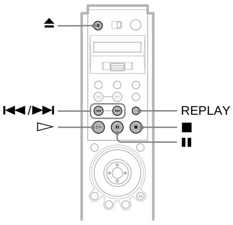
Press I/⏻. The player enters standby mode.

**Hint**
You can have the player turn off automatically whenever you leave it in stop mode for more than 30 minutes. To turn on this function, set "AUTO POWER OFF" in "CUSTOM SETUP" to "ON" (page 79).

**Note**
Super Audio CD audio signals are not output from the digital jack.

➡continued

## Additional operations



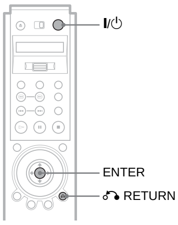
| To | Operation |
|---|---|
| Stop | Press ■ |
| Pause | Press ❚❚ |
| Resume play after pause | Press ❚❚ or ▷ |
| Go to the next chapter, track, or scene in continuous play mode | Press ⏭ on the remote, or briefly turn the Playback Control on the player clockwise |
| Go back to the previous chapter, track, or scene in continuous play mode | Press ⏮ on the remote, or briefly turn the Playback Control on the player counterclockwise |
| Stop play and remove the disc | Press ⏏ |
| Replay the previous scene (DVD VIDEO only) | Press REPLAY |

**Hint**
The Replay function is useful when you want to review a scene or dialog that you missed.

**Note**
You may not be able to use the Replay function with some scenes.

## Locking the disc tray (Child Lock)

You can lock the disc tray to prevent children from opening it.



**When the player is in standby mode, press ↩ RETURN, ENTER, and then I/⏻ on the remote.**
The player turns on and "LOCKED" appears on the front panel display.
The ⏏ button on the player or the remote does not work while the Child Lock is set.

---

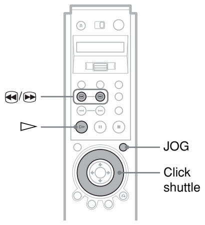
#### To unlock the disc tray

When the player is in standby mode, press ↩ RETURN, ENTER, and then I/⏻ again.

**Note**
Even if you select "RESET" under "SETUP" in the Control Menu (page 76), the disc tray remains locked.

# Searching for a Particular Point on a Disc (Search, Shuttle mode, Jog mode)

You can quickly locate a particular point on a disc by monitoring the picture or playing back slowly.



**Note**

Depending on the DVD/VIDEO CD, you may not be able to do some of the operations described.

## Locating a point quickly (Search)

DVD-V DVD-RW VCD SA-CD CD DATA CD

During playback, keep pressing ▶▶ to locate a point in the playback direction or keep pressing ◀◀ to locate a point in the opposite direction. When you find the point you want, release the button to return to normal playback speed.

## Using the click shuttle on the remote (Shuttle mode)

DVD-V DVD-RW VCD SA-CD CD DATA CD

Turn the click shuttle on the remote. The playback speed changes depending on the turning direction and degree of rotation as follows:

◆**During playback**

FF2▶▶ Fast forward (faster than FF1▶▶)
↕
FF1▶▶ Fast forward
↕
×2▶ (DVD VIDEO/Super Audio CD/CD only)
↕
PLAY▶ (normal speed)
↕
×2◀ (DVD VIDEO only)
↕
FR1◀◀ Fast reverse
↕
FR2◀◀ Fast reverse (faster than FR1◀◀)

If you turn the click shuttle quickly, the playback speed goes to “FF2▶▶” or “FR2◀◀” immediately.

◆**During pause mode (DVD VIDEO, DVD-RW, VIDEO CD only)**

SLOW1▮► (playback direction)
↕
SLOW2▮► (playback direction – slower than SLOW1▮►)
↕
PAUSE▮▮
↕
SLOW2◄▮ (opposite direction – slower than SLOW1◄▮) (DVD only)
↕
SLOW1◄▮ (opposite direction) (DVD only)

### To return to normal play

Press ▷.

➡continued

## Playing a disc frame by frame using the click shuttle (Jog mode) DVD-V DVD-RW VCD

1. **Press JOG on the remote.**
   “JOG” appears in the LCD screen.
2. **Turn the click shuttle.**
   Depending on the turning speed, playback goes to frame-by-frame playback in the direction that the click shuttle is turned. Turn the click shuttle clockwise to go forward, and counterclockwise to go backwards (DVD only). If you turn the click shuttle at a constant speed for a while, the playback speed goes to slow or normal.

### To return to normal play

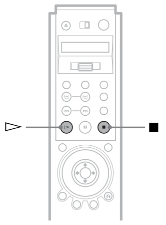
Press ▷.

### To turn off the Jog mode

Press JOG again so that “JOG” disappears from the LCD screen.

# Resuming Playback From the Point Where You Stopped the Disc (Multi-disc Resume) DVD-V VCD

The player stores the point where you stopped the disc for up to 300 discs and resumes playback the next time you insert the same disc. When you store a resume playback point for the 301st disc, the resume playback point for the first disc is deleted.



1. **While playing a disc, press ■ to stop playback.**
   “RESUME” appears on the front panel display.
2. **Press ▷.**
   The player starts playback from the point where you stopped the disc in step 1.

**Hints**

- To play from the beginning of the disc, press ■ twice, then press ▷.
- For DVD-RWs in VR mode, CDs, Super Audio CDs, and DATA CDs, the player remembers the resume playback point for the current disc unless the disc tray is opened, the power cord is disconnected, or only for DATA CDs, the player enters standby mode.

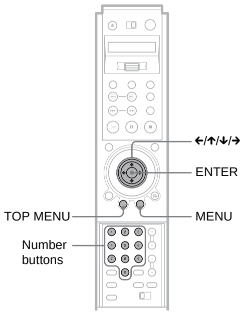
**Notes**

- “MULTI-DISC RESUME” in “CUSTOM SETUP” must be set to “ON” (default) for this function to work (page 80).
- The resume playback point for the current disc is cleared when:
  – you change the play mode.
  – you change the settings on the Setup Display.
- Resume Play does not work during Shuffle Play and Program Play.
- This function may not work with some discs.

# Using the DVD’s Menu

DVD-V

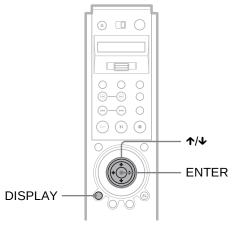
A DVD is divided into long sections of a picture or a music feature called “titles.” When you play a DVD which contains several titles, you can select the title you want using the TOP MENU button.
When you play DVDs that allow you to select items such as the language for the subtitles and the language for the sound, select these items using the MENU button.



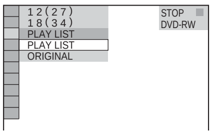
1. **Press TOP MENU or MENU.**
   The disc’s menu appears on the TV screen.
   The contents of the menu vary from disc to disc.
2. **Press ←/↑/↓/→ or the number buttons to select the item you want to play or change.**
3. **Press ENTER.**

# Selecting “ORIGINAL” or “PLAY LIST” on a DVD-RW DVD-RW

Some DVD-RWs in VR (Video Recording) mode have two types of titles for playback: originally recorded titles (ORIGINAL) and titles that can be created on recordable DVD players for editing (PLAY LIST). You can select the type of titles to be played.



1. **Press DISPLAY while the player is stopped.**
   The Control Menu appears.
2. **Press ↑/↓ to select (ORIGINAL/PLAY LIST), then press ENTER.**
   The options for “ORIGINAL/PLAY LIST” appear.

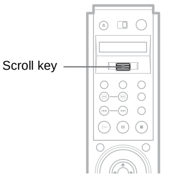


3. **Press ↑/↓ to select the setting.**
   - PLAY LIST: plays the titles created from “ORIGINAL” for editing.
   - ORIGINAL: plays the titles originally recorded.
4. **Press ENTER.**

### To turn off the Control Menu

Press DISPLAY repeatedly until the Control Menu is turned off.

# Selecting a Playback Area for a Super Audio CD SA-CD



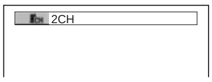
## Selecting a playback area on a 2 channel + Multi-channel Super Audio CD

Some Super Audio CDs consist of a 2 channel playback area and a multi-channel playback area. You can select the playback area you want to listen to.

**1 Toggle the scroll key up or down while the player is stopped to display "MULTI/2CH" in the LCD screen.**

**2 Point the remote at the player and press down on the scroll key so that ⌔ appears in the LCD screen.**

The following display appears.


2CH

**3 Press down on the scroll key repeatedly to select "MULTI" for a multi-channel playback area or "2CH" for a 2 channel playback area.**

The "MULTI" indicator in the front panel display lights up when playing a multi-channel playback area.

**Hint**

You can also select "MULTI/2CH" from the Control Menu (page 14).

## Selecting a playback layer of hybrid Super Audio CDs

Some Super Audio CDs consist of an HD layer and a CD layer. You can select the playback layer you want to listen to.

**1 Toggle the scroll key up or down while the player is stopped to display "SACD/CD" in the LCD screen.**

**2 Point the remote at the player and press down on the scroll key so that ⌔ appears in the LCD screen.**

**3 Press down on the scroll key repeatedly to select "SACD" for an HD layer or "CD" for a CD layer.**

When playing a CD layer, the "CD" indicator in the front panel display lights up.

**Notes**

- For details about Super Audio CD discs, see page 90.
- Each play mode function works only within the selected layer or playback area.

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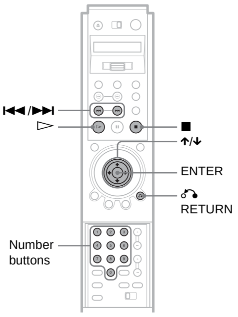
# Playing VIDEO CDs With PBC Functions (PBC Playback) VCD

PBC (Playback Control) allows you to play VIDEO CDs interactively by following the menu on the TV screen.



**1 Start playing a VIDEO CD with PBC functions.**

The menu for your selection appears.

**2 Select the item number you want by pressing ↑/↓ or the number buttons.**

**3 Press ENTER.**

**4 Follow the instructions in the menu for interactive operations.**

Refer to the instructions supplied with the disc, as the operating procedure may differ depending on the VIDEO CD.

**To return to the menu**

Press ↶ RETURN.

**Hint**

To play without using PBC, press ⏮/⏭ or the number buttons while the player is stopped to select a track, then press ▷ or ENTER.

"Play without PBC" appears on the TV screen and the player starts normal play. You cannot play still pictures such as a menu.

To return to PBC playback, press ■ twice then press ▷.

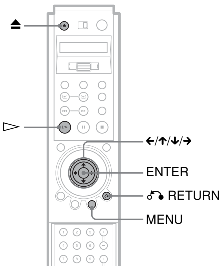
**Note**

Depending on the VIDEO CD, "Press ENTER" in step 3 may appear as "Press SELECT" in the instructions supplied with the disc. In this case, press ▷.

---

# Playing an MP3 Audio Track DATA CD

You can play back DATA CDs (CD-ROMs/CD-Rs/CD-RWs) recorded in MP3 (MPEG1 Audio Layer 3) format.



**1 Press ⏏ and place a DATA CD on the disc tray.**

**2 Press ▷.**

The disc tray closes, and the player starts to play the first MP3 audio track in the first album on the disc.

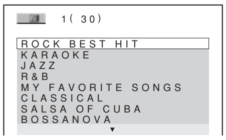
**Notes**

- The player can play MP3 audio tracks recorded in the following sampling frequencies: 32 kHz, 44.1 kHz, 48 kHz.
- The playback order may be different from the edited order. See "The playback order of MP3 audio tracks" for details (page 44).

## Selecting an album and track

**1 Press MENU.**

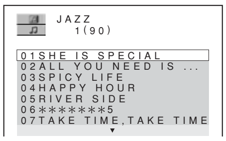
The list of MP3 albums recorded on the DATA CD appears.


1( 30)

ROCK BEST HIT
KARAOKE
JAZZ
R&B
MY FAVORITE SONGS
CLASSICAL
SALSA OF CUBA
BOSSANOVA
▼

**2 Select an album using ↑/↓ and press ENTER.**

The list of tracks contained in the album appears.


JAZZ
1(90)

01SHE IS SPECIAL
02ALL YOU NEED IS ...
03SPICY LIFE
04HAPPY HOUR
05RIVER SIDE
06∗∗∗∗∗∗∗5
07TAKE TIME,TAKE TIME
▼

**3 Select a track using ↑/↓ and press ENTER.**

The selected track starts playing.

When a track or album is being played, its title is shaded.

**To go to the next or previous page**

Press → or ←.

**To return to the previous display**

Press ↶ RETURN.

**To turn off the display**

Press MENU.

**Notes**

- Only the letters in the alphabet and numbers can be used for album or track names. Anything else is displayed as "∗."
- ID3 tags cannot be displayed.

## About MP3 audio tracks

You can play MP3 audio tracks on CD-ROMs, CD-Rs, or CD-RWs. However, the discs must be recorded according to ISO9660 level 1, level 2, or Joliet format for the player to recognize the tracks.

You can also play discs recorded in Multi Session.

➔continued

---

See the instructions of the CD-R/RW device or recording software (not supplied) for details on the recording format.

**To play a Multi Session CD**

This player can play Multi Session CDs when an MP3 audio track is located in the first session. Any subsequent MP3 audio tracks, recorded in the later sessions, can also be played back.

When audio tracks and images in music CD format or video CD format are recorded in the first session, only the first session will be played back.

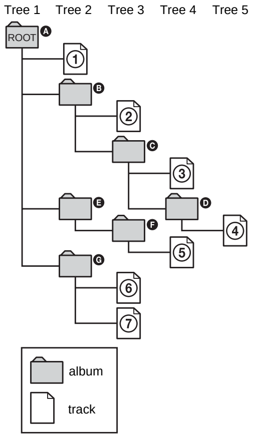
**Notes**

- If you put the extension ".MP3" to data not in MP3 format, the player cannot recognize the data properly and will generate a loud noise which could damage your speaker system.
- The player cannot play audio tracks in MP3PRO format.

**The playback order of MP3 audio tracks**

The playback order of albums and tracks recorded on a DATA CD is as follows.

**◆Structure of disc contents**



When you insert a DATA CD and press ▷, the numbered tracks are played sequentially, from ① through ⑦. Any sub-albums/tracks contained within a currently selected album take priority over the next album in the same tree. (Example: Ⓒ contains Ⓓ so ④ is played before ⑤.)

When you press MENU and the list of MP3 albums appears (page 43), the albums are arranged in the following order: Ⓐ → Ⓑ → Ⓒ → Ⓓ → Ⓕ → Ⓖ. Albums that do not contain tracks (such as album Ⓔ) do not appear in the list.

**Hints**

- If you add numbers (01, 02, 03, etc.) to the front of the track file names, the tracks will be played in that order.
- Since a disc with many trees takes longer to start playback, it is recommended that you create albums of no more than two trees.

**Notes**

- Depending on the software you use to create the DATA CD, the playback order may differ from the illustration above.
- The playback order above may not be applicable if there are more than a total of 999 albums and tracks in the DATA CD.
- The player can recognize up to 499 albums (the player will count just albums, including albums that do not contain MP3 audio tracks). The player will not play any albums beyond the first 499 albums. Of the first 499 albums, the player will play no more than a combined total of 999 albums and tracks.

# Various Play Mode Functions (Program Play, Shuffle Play, Repeat Play, A-B Repeat Play)

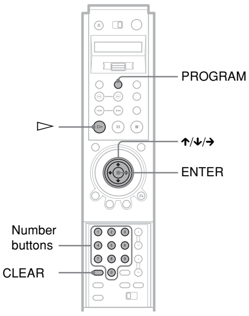
You can set the following play modes:
- Program Play (page 45)
- Shuffle Play (page 46)
- Repeat Play (page 47)
- A-B Repeat Play (page 48)

**Note**

The play mode is canceled when:
– you open the disc tray.
– the player enters standby mode by pressing I/⏻.

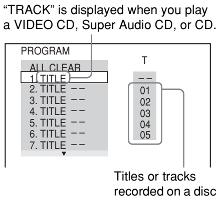
## Creating your own program (Program Play) DVD-V VCD SA-CD CD

You can play the contents of a disc in the order you want by arranging the order of the titles, chapters, or tracks on the disc to create your own program. You can program up to 99 titles, chapters, and tracks.


PROGRAM
▷
↑/↓/→
ENTER
Number buttons
CLEAR

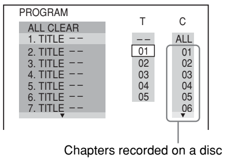
**1 Press PROGRAM.**

The display for programming appears.


"TRACK" is displayed when you play a VIDEO CD, Super Audio CD, or CD.
PROGRAM
ALL CLEAR
1. TITLE
2. TITLE – –
3. TITLE – –
4. TITLE – –
5. TITLE – –
6. TITLE – –
7. TITLE – –
T
– –
01
02
03
04
05
Titles or tracks recorded on a disc

**2 Press →.**

The cursor moves to the title or track row "T" (in this case, "01").

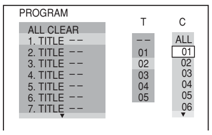

PROGRAM
ALL CLEAR
1. TITLE – –
2. TITLE – –
3. TITLE – –
4. TITLE – –
5. TITLE – –
6. TITLE – –
7. TITLE – –
T
– –
01
02
03
04
05
C
ALL
01
02
03
04
05
06
Chapters recorded on a disc

**3 Select the title, chapter, or track you want to program.**

**◆ When playing a DVD VIDEO**

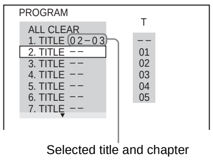
For example, select chapter "03" of title "02."

Press ↑/↓ or the number buttons to select "02" under "T," then press ENTER.


PROGRAM
ALL CLEAR
1. TITLE – –
2. TITLE – –
3. TITLE – –
4. TITLE – –
5. TITLE – –
6. TITLE – –
7. TITLE – –
T
– –
01
02
03
04
05
C
ALL
01
02
03
04
05
06

Next, press ↑/↓ or the number buttons to select "03" under "C," then press ENTER.

➡continued

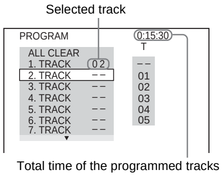

PROGRAM
ALL CLEAR
1. TITLE 0 2 – 0 3
2. TITLE – –
3. TITLE – –
4. TITLE – –
5. TITLE – –
6. TITLE – –
7. TITLE – –
T
– –
01
02
03
04
05
Selected title and chapter

**◆ When playing a VIDEO CD, Super Audio CD, or CD**

For example, select track "02."

Press ↑/↓ or the number buttons to select "02" under "T," then press ENTER.

The track number may be displayed in 3 digits for a Super Audio CD.


Selected track
PROGRAM
0:15:30
ALL CLEAR
1. TRACK 0 2
2. TRACK – –
3. TRACK – –
4. TRACK – –
5. TRACK – –
6. TRACK – –
7. TRACK – –
T
– –
01
02
03
04
05
Total time of the programmed tracks

**4 To program other titles, chapters, or tracks, repeat steps 2 to 3.**

The programmed titles, chapters, and tracks are displayed in the selected order.

**5 Press ▷ to start Program Play.**

Program Play begins.

When the program ends, you can restart the same program again by pressing ▷.

### To return to normal play

Press CLEAR during playback. To play the same program again, select "ON" in step 2.

### To turn off the display

Press PROGRAM repeatedly until the display is turned off.

### To change or cancel a program

1. Press PROGRAM.
2. Select the program number of the title, chapter, or track you want to change or cancel using ↑/↓ or the number buttons, and press →.
3. Follow step 3 of "Creating your own program (Program Play)" (page 45) for new programming. To cancel a program, select "--" under "T," then press ENTER.

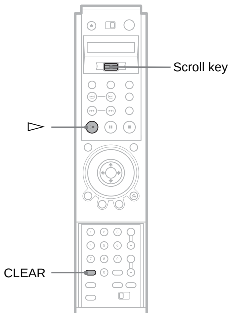
### To cancel all the titles, chapters, or tracks in the programmed order

1. Press PROGRAM.
2. Press ↑ and select "ALL CLEAR."
3. Press ENTER.

**Hints**
- You can do Repeat Play or Shuffle Play of the programmed titles, chapters, or tracks. During Program Play, follow the steps of "Repeat Play" (page 47) or "Shuffle Play" (page 46).
- You can select "PROGRAM" from the Control Menu (page 14)

## Playing in random order (Shuffle Play) DVD-V VCD SA-CD CD

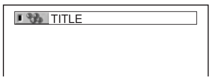
You can have the player "shuffle" titles, chapters, or tracks. Subsequent "shuffling" may produce a different playing order.


Scroll key
▷
CLEAR

**1 Toggle the scroll key up or down to display "SHUFFLE" in the LCD screen.**

**2 Point the remote at the player and press down on the scroll key so that 📶 appears in the LCD screen.**

The following display appears.



**3 Press down on the scroll key repeatedly to select the item to be shuffled.**

**◆ When playing a DVD VIDEO**
- TITLE
- CHAPTER

**◆ When playing a VIDEO CD, Super Audio CD, or CD**
- TRACK

**◆ When Program Play is activated**
- ON: shuffles titles, chapters, or tracks selected in Program Play.

### To return to normal play

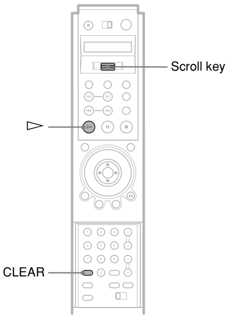
Press CLEAR, or select "OFF" in step 3.

**Hints**
- You can set Shuffle Play while the player is stopped. After selecting the "SHUFFLE" option, press ▷. Shuffle Play starts.
- Up to 200 chapters in a disc can be played in random order when "CHAPTER" is selected.
- You can also select "SHUFFLE" from the Control Menu (page 14).

## Playing repeatedly (Repeat Play) DVD-V DVD-RW VCD SA-CD CD DATA CD

You can play all of the titles or tracks on a disc or a single title, chapter, or track repeatedly.

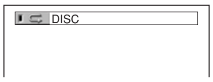
You can use a combination of Shuffle or Program Play modes.


Scroll key
▷
CLEAR

**1 Toggle the scroll key up or down to display "REPEAT" in the LCD screen.**

**2 Point the remote at the player and press down on the scroll key so that 📶 appears in the LCD screen.**

The following display appears.



**3 Press down on the scroll key repeatedly to select the item to be repeated.**

**◆ When playing a DVD VIDEO**
- DISC: repeats all of the titles.
- TITLE: repeats the current title on a disc.
- CHAPTER: repeats the current chapter.

**◆ When playing a DVD-RW**
- DISC: repeats all the titles of the selected type, "ORIGINAL" or "PLAY LIST" (page 40).
- TITLE: repeats the current title on a disc.
- CHAPTER: repeats the current chapter.

➡continued

**◆ When playing a VIDEO CD, Super Audio CD, or CD**
- DISC: repeats all of the tracks.
- TRACK: repeats the current track.

**◆ When playing a DATA CD (MP3 audio)**
- DISC: repeats all of the albums.
- ALBUM: repeats the current album.
- TRACK: repeats the current track.

**◆ When Program Play or Shuffle Play is activated**
- ON: repeats Program Play or Shuffle Play.

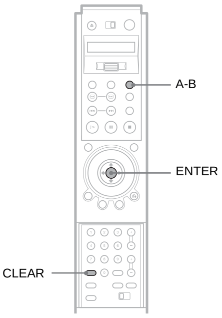
### To return to normal play

Press CLEAR, or select "OFF" in step 3.

**Hints**
- You can set Repeat Play while the player is stopped. After selecting the "REPEAT" option, press ▷. Repeat Play starts.
- You can also select "REPEAT" from the Control Menu (page 14).

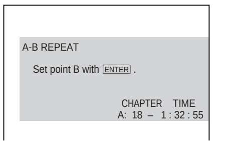
## Repeating a specific portion (A-B Repeat Play) DVD-V DVD-RW VCD SA-CD CD

You can play a specific portion of a title, chapter, or track repeatedly. This function is useful when you want to memorize lyrics, etc.


A-B
ENTER
CLEAR

**1 During playback, when you find the starting point (point A) of the portion to be played repeatedly, press A-B.**

The starting point (point A) is set.


A-B REPEAT
Set point B with ENTER .
CHAPTER TIME
A: 18 – 1 : 32 : 55

**2 When you reach the ending point (point B), press ENTER or press A-B again.**

The set points are displayed and the player starts repeating this specific portion.

### To return to normal play

Press CLEAR.

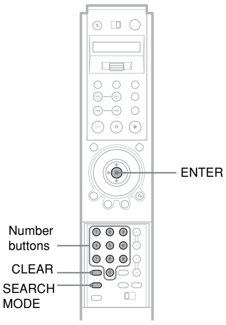
**Hint**

You can also select "A-B REPEAT" from the Control Menu (page 14).

**Notes**
- When you set A-B Repeat Play, the settings for Shuffle Play, Repeat Play, and Program Play are canceled.
- A-B Repeat Play does not work for titles containing still pictures on a DVD-RW in VR mode.
- A-B Repeat Play does not work across multiple titles on a DVD-RW in VR mode.

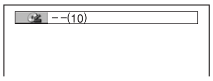
## Searching for a Title/ Chapter/Track/Index/ Scene (Search mode) DVD-V DVD-RW VCD SA-CD CD DATA CD

You can search a DVD by title or chapter, and you can search a VIDEO CD/Super Audio CD/CD by track, index, or scene. As titles and tracks are assigned unique numbers on the disc, you can select the desired one by entering its number. Or, you can search for a scene using the time code.



**1 Press SEARCH MODE.**

The following display appears.
"-- (∗∗)" appears next to the icon (∗∗ refers to a number).
The number in parentheses indicates the total number of titles, tracks, indexes, scenes, etc., of the disc.



**2 Press SEARCH MODE repeatedly to select the search method.**

◆ **When playing a DVD VIDEO/DVD-RW**
- TITLE
- CHAPTER
- TIME/TEXT
- TIME/MEMO

Select "TIME/TEXT" or "TIME/MEMO" to search for a starting point by inputting the time code.

◆ **When playing a VIDEO CD**
- TRACK
- INDEX

◆ **When playing a VIDEO CD with PBC Playback**
- SCENE
- INDEX

◆ **When playing a Super Audio CD/CD**
- TRACK
- INDEX

◆ **When playing a DATA CD (MP3 audio)**
- ALBUM
- TRACK

**3 Select the number of the title, track, scene, time code, etc. you want by pressing the number buttons to select the digit.**

For example, to find the scene at 2 hours, 10 minutes, and 20 seconds after the beginning, select "TIME/TEXT" or "TIME/MEMO" in step 2 and enter "21020."

**If you make a mistake**
Cancel the number by pressing CLEAR, then select another number.

**4 Press ENTER.**

The player starts playback from the selected number.

**To turn off the display**
Press SEARCH MODE repeatedly until the display is turned off.

→continued

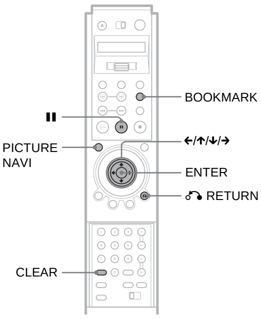
**Hints**
- You can display the first scenes of titles, chapters or tracks recorded on the disc on a screen divided into 9 sections. You can start playback directly by selecting one of the scenes. See "Searching by Scene (PICTURE NAVIGATION)" below.
- You can also select "TITLE," "CHAPTER," "TRACK," "INDEX," "SCENE," "TIME/TEXT" ("TIME/MEMO"), or "ALBUM" from the Control Menu (page 14).
- You can search for a chapter (DVD VIDEO/DVD-RW) or track (Super Audio CD/CD) by pressing the number buttons and ENTER.

**Note**
You cannot search for a still picture on a DVD-RW in VR mode.

## Searching by Scene

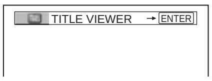
### (PICTURE NAVIGATION)

You can divide the screen into 9 subscreens and find a desired scene quickly.



**1 Press PICTURE NAVI during playback.**

The following display appears.



**2 Press PICTURE NAVI repeatedly to select the item.**

Refer to the explanations given for each item in the following sections.
- TITLE VIEWER (DVD VIDEO only)
- CHAPTER VIEWER (DVD VIDEO only)
- BOOKMARK (DVD VIDEO/VIDEO CD only)
- TRACK VIEWER (VIDEO CD only)
- STROBE PLAYBACK (DVD VIDEO/VIDEO CD only)
- ANGLE VIEWER (DVD VIDEO only)

**3 Press ENTER.**

**To return to normal play**
Press RETURN.

**Hint**
You can also select "PICTURE NAVIGATION" from the Control Menu (page 14).

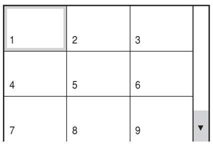
**Notes**
- Depending on the disc, you may not be able to select all functions.
- The sound is muted when using this function.

### Scanning the title, chapter, or track (TITLE VIEWER, CHAPTER VIEWER, TRACK VIEWER) DVD-V VCD

You can divide the screen into 9 subscreens and display the first scenes of titles, chapters, or tracks.

You can also play back from the selected title, chapter, or track. After performing step 3 of "Searching by Scene (PICTURE NAVIGATION)" above, select the scene using ←/↑/↓/→, and press ENTER.

**Hint**
If there are more than 9 titles, chapters, or tracks, ▼ is displayed at the bottom right.
To display the additional titles, chapters, or tracks, select the bottom right scene (the position 9) and press ↓. To return to the previous scene, select the top left scene (the position 1) and press ↑.



### Setting and selecting a favorite scene (Bookmark) DVD-V VCD

You can have the player store specific portions of the disc in memory and play them immediately whenever you want (Bookmark). Up to 9 bookmarks per disc for a total of 300 discs can be stored in memory.

You can play back from the bookmarked scene. After performing step 3 of "Searching by Scene (PICTURE NAVIGATION)" above, select the bookmark using ←/↑/↓/→, then press ENTER.

**To set a bookmark**
During playback, press BOOKMARK when you find a scene to be bookmarked.

**To reset the bookmark**
After displaying the bookmarks with the PICTURE NAVIGATION function, select the bookmark you want to reset using ←/↑/↓/→, then press CLEAR.

**To reset all the bookmarks for the player**
Select "BOOKMARK RESET →" of "CUSTOM SETUP" in the Setup Display (page 80).

**Hint**
The number of the bookmark you selected is displayed on the front panel display.

**Note**
The player can store the bookmarks of up to 300 discs in memory. When you have the player store over 300 discs in memory, bookmarks of the oldest disc are erased.

→continued

### Dividing a scene into 9 sections (STROBE PLAYBACK) DVD-V VCD

You can display 9 consecutive moving pictures on the screen.

When you press II after performing step 3 of "Searching by Scene (PICTURE NAVIGATION)" above, the moving pictures pause.

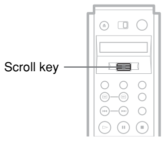
### Displaying different angles simultaneously (ANGLE VIEWER) DVD-V

If various angles (multi-angles) for a scene are recorded on the DVD VIDEO, you can display all of the angles recorded on the disc on the screen divided into 9 sections.

You can also play back from the selected angle. After performing step 3 of "Searching by Scene (PICTURE NAVIGATION)" above, select the angle using ←/↑/↓/→, and press ENTER.

# Checking the Playing Time and Remaining Time DVD-V DVD-RW VCD SA-CD CD DATA CD

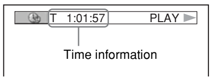
You can check the playing time and remaining time of the current title, chapter, or track. Also, you can check the Disc Memo, DVD/Super Audio CD/CD text, or track/album name (MP3 audio) recorded on the disc.



**1 Toggle the scroll key up or down during playback to display "TIME/TEXT" in the LCD screen.**

**2 Point the remote at the player and press down on the scroll key so that ᯤ appears in the LCD screen.**

The following display appears.


T 1:01:57
PLAY
Time information

**3 Press down on the scroll key repeatedly to change the time information.**

The display and the kind of time information that you can check depend on the disc you are playing.

**◆ When playing a DVD VIDEO or DVD-RW**

- T ∗:∗:∗ (hours: minutes: seconds)
  Playing time of the current title
- T–∗:∗:∗
  Remaining time of the current title
- C ∗:∗:∗
  Playing time of the current chapter
- C–∗:∗:∗
  Remaining time of the current chapter

**◆ When playing a VIDEO CD (with PBC functions)**

- ∗:∗ (minutes: seconds)
  Playing time of the current scene

**◆ When playing a VIDEO CD (without PBC functions), Super Audio CD, or CD**

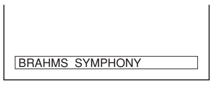
- T ∗:∗ (minutes: seconds)
  Playing time of the current track
- T–∗:∗
  Remaining time of the current track
- D ∗:∗
  Playing time of the current disc
- D–∗:∗
  Remaining time of the current disc

**◆ When playing a DATA CD (MP3 audio)**

- ∗:∗ (minutes: seconds)
  Playing time of the current track

### To check the Disc Memo, DVD/Super Audio CD/CD text, or track/album names (MP3 audio)

Press down on the scroll key repeatedly in step 3 to display the Disc Memo or text recorded on the DVD/Super Audio CD/CD/DATA CD. The DVD/Super Audio CD/CD text appears only when text is recorded in the disc. You cannot change the text. If the disc does not contain text, "NO TEXT" appears. In this case, you can label the disc. To label the disc, see page 66.


BRAHMS SYMPHONY

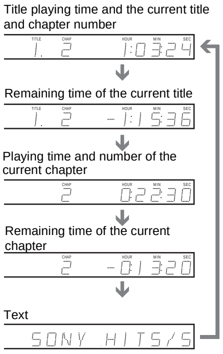
For DATA CDs, the track/album names of the MP3 audio track appears (page 56).

➡continued

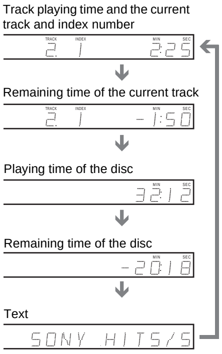
## Checking the information on the front panel display

You can view the time information and text displayed on the TV screen also on the front panel display. The information on the front panel display changes as follows when you change the time information on your TV screen.

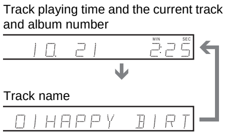
### When playing a DVD VIDEO or DVD-RW


Title playing time and the current title and chapter number
TITLE CHAP HOUR MIN SEC
1. 2 1:03:24
Remaining time of the current title
1. 2 -1:15:36
Playing time and number of the current chapter
CHAP HOUR MIN SEC
2 0:22:30
Remaining time of the current chapter
2 -0:13:20
Text
SONY HITS/S

### When playing a VIDEO CD (without PBC functions), Super Audio CD, or CD


Track playing time and the current track and index number
TRACK INDEX MIN SEC
2. 1 2:25
Remaining time of the current track
2. 1 -1:50
Playing time of the disc
32:12
Remaining time of the disc
-20:18
Text
SONY HITS/S

### When playing a DATA CD (MP3 audio)


Track playing time and the current track and album number
MIN SEC
10. 21 2:25
Track name
01HAPPY BIRT

**Hints**

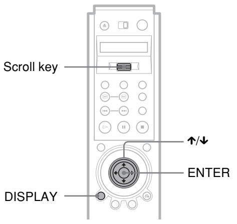
- When playing VIDEO CDs with PBC functions, the scene number and the playing time are displayed.
- Long text that does not fit in a single line will scroll across the front panel display.
- You can check the time information and text using the Control Menu (page 14).

**Notes**

- Depending on the type of disc being played, the disc's text or track name may not be displayed.
- The player can only display the first level of the disc's text, such as the disc name or title.
- Playing time of MP3 audio tracks may not be displayed correctly.

# Checking the Play Information

You can check information such as the bit rate or the disc layer that is being played.


Scroll key
↑/↓
ENTER
DISPLAY

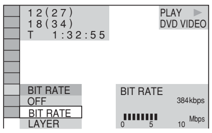
## Checking the play information of a DVD (ADVANCED) DVD-V DVD-RW

**1 Press DISPLAY during playback.**

The Control Menu is displayed.

**2 Press ↑/↓ to select (ADVANCED), then press ENTER.**

The options for "ADVANCED" appear.


1 2 ( 2 7 )
1 8 ( 3 4 )
T 1 : 3 2 : 5 5
PLAY
DVD VIDEO
BIT RATE
OFF
BIT RATE
LAYER
BIT RATE
384kbps
0 5 10
Mbps

**3 Press ↑/↓ to select items.**

For each item, see "Display of each item" below.

- BIT RATE: displays the bit rate.
- LAYER: displays the layer and the pick-up point.

**4 Press ENTER.**

### To turn off the ADVANCED display

Select "OFF" in step 3.

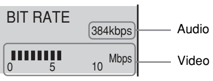
### To turn off the Control Menu

Press DISPLAY repeatedly until the Control Menu is turned off.

### Display of each item

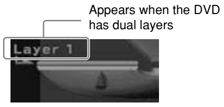
By pressing DISPLAY repeatedly, you can display either "BIT RATE" or "LAYER," whichever was selected in "ADVANCED."

**◆BIT RATE**


BIT RATE
384kbps
0 5 10
Mbps
Audio
Video

Bit rate refers to the amount of video/audio data per second in a disc. While playing a disc, the approximate bit rate of the playback picture is displayed as Mbps (megabits per second) and the audio as kbps (kilobits per second). The higher the bit rate, the larger the amount of data. However, this does not always mean that you can get higher quality pictures or sounds.

**◆LAYER**


Appears when the DVD has dual layers
Layer 1

Indicates the approximate point where the disc is playing.
If it is a dual-layer DVD, the player indicates which layer is being read ("Layer 0" or "Layer 1").
For details on the layers, see page 88 (DVD VIDEO).

➡continued

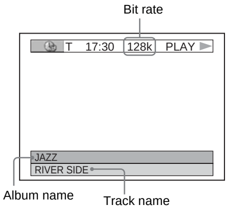
## Checking the play information of a DATA CD DATA CD

You can display the audio bit rate (the amount of data per second of the current audio) on the TV screen.

**1 While playing MP3 audio tracks on a DATA CD, toggle the scroll key up or down to display "TIME/TEXT" in the LCD screen.**

**2 Point the remote at the player and press down on the scroll key so that ᯤ appears in the LCD screen.**

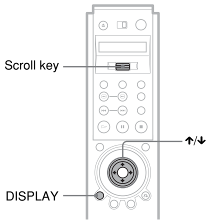
The audio bit rate appears on the TV screen.


Bit rate
T 17:30
128k
PLAY
JAZZ
RIVER SIDE
Album name
Track name

## Changing the Sound

**DVD-V** **DVD-RW** **VCD** **CD** **DATA CD**

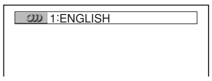
When playing a DVD VIDEO recorded in multiple audio formats (PCM, Dolby Digital, or DTS), you can change the audio format. If the DVD VIDEO is recorded with multilingual tracks, you can also change the language.
With CDs, DATA CDs, or VIDEO CDs, you can select the sound from the right or left channel and listen to the sound of the selected channel through both the right and left speakers. For example, when playing a disc containing a song with the vocals on the right channel and the instruments on the left channel, you can hear the instruments from both speakers by selecting the left channel.



### 1 Toggle the scroll key up or down during playback to display "AUDIO" in the LCD screen.

### 2 Point the remote at the player and press down on the scroll key so that ᯤ appears in the LCD screen.

The following display appears.


1:ENGLISH

### 3 Press down on the scroll key repeatedly to select one of the audio options.

◆ **When playing a DVD VIDEO**
Depending on the DVD VIDEO, the choice of language varies.
When 4 digits are displayed, they indicate a language code. Refer to "Language Code List" on page 92 to see which language the code represents.
When the same language is displayed two or more times, the DVD VIDEO is recorded in multiple audio formats.

◆ **When playing a DVD-RW**
The types of sound tracks recorded on a disc are displayed. The default setting is underlined.
Example:
- 1: MAIN (main sound)
- 1: SUB (sub sound)
- 1: MAIN+SUB (main and sub sound)

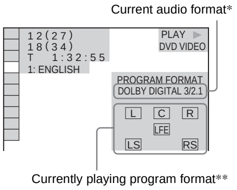
◆ **When playing a VIDEO CD, CD, or DATA CD (MP3 audio)**
The default setting is underlined.
- STEREO: The standard stereo sound
- 1/L: The sound of the left channel (monaural)
- 2/R: The sound of the right channel (monaural)

**Hint**
You can also select "AUDIO" from the Control Menu (page 14).

**Note**
You cannot change the sound for Super Audio CDs.

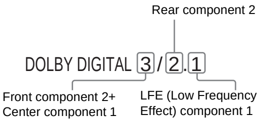
### Displaying the audio information of the disc DVD-V

Press DISPLAY during playback to display the Control Menu. Select "AUDIO" using ↑/↓. The channels being played are displayed on the screen.
For example, in Dolby Digital format, multiple signals ranging from monaural to 5.1 channel signals can be recorded on a DVD VIDEO. Depending on the DVD VIDEO, the number of the recorded channels may differ.



*"PCM," "DTS," or "DOLBY DIGITAL" is displayed.
In the case of "DOLBY DIGITAL," the channels in the playing track are displayed by numbers as follows:

For Dolby Digital 5.1 ch:



**The letters in the program format display indicate the following sound components:

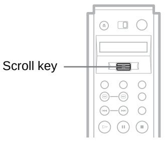
| | |
|---|---|
| L: | Front (left) |
| R: | Front (right) |
| C: | Center |
| LS: | Rear (left) |
| RS: | Rear (right) |
| S: | Rear (monaural): The rear component of the Dolby Surround processed signal and the Dolby Digital signal |
| LFE: | Low Frequency Effect signal |

**Hint**
When playing Dolby Digital or DTS sound tracks, "LFE" is enclosed in a dotted line when the LFE signal is not being output.

---

## SURROUND Mode Settings DVD-V DVD-RW VCD CD DATA CD

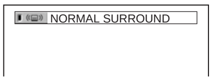
You can enjoy surround sound while playing discs recorded in the Dolby Surround (Pro Logic) format.
This function is available when you connect 4 or more speakers and set "REAR" in "SIZE" of "SPEAKER SETUP" to any setting other than "NONE."



### 1 Toggle the scroll key up or down during playback to display "SURROUND" in the LCD screen.

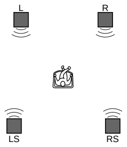
### 2 Point the remote at the player and press down on the scroll key so that ᯤ appears in the LCD screen.

The following display appears.


NORMAL SURROUND

### 3 Press down on the scroll key repeatedly to select one of the surround modes.

- NORMAL SURROUND
Discs with 2 channel audio signals are decoded with the Dolby Surround (Pro Logic) decoder to create surround effects. The rear speakers will emit identical monaural sounds. If you are using a center speaker, the appropriate sounds for the center speaker will be delivered.
- ENHANCED SURROUND
Provides a greater sense of presence from a Dolby Surround (Pro Logic) source with a monaural rear channel signal. Produces a stereo like effect in the rear channels.



L: Front speaker (left)
R: Front speaker (right)
LS: Rear speaker (left)
RS: Rear speaker (right)

**To cancel the setting**
Select "OFF" in step 3.

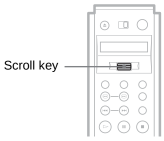
**Hint**
You can also select "SURROUND" from the Control Menu (page 14).

**Notes**
- If you use the DIGITAL OUT (OPTICAL or COAXIAL) jack and set "DOLBY DIGITAL" to "DOLBY DIGITAL," and "DTS" to "DTS" in "AUDIO SETUP," sound will come from your speakers but it will not have the surround effect.
- If the player is set up to output the signal from the DIGITAL OUT (OPTICAL or COAXIAL) jack, the surround effect will not be heard when you play a CD.

## Changing the Angles

**DVD-V**

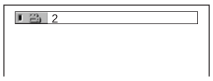
If various angles (multi-angles) for a scene are recorded on the DVD VIDEO, "ANGLE" appears in the front panel display. This means that you can change the viewing angle.



### 1 Toggle the scroll key up or down during playback to display "ANGLE" in the LCD screen.

### 2 Point the remote at the player and press down on the scroll key so that ᯤ appears in the LCD screen.

The following display appears.


2

### 3 Press down on the scroll key repeatedly to select an angle.

The scene changes to the selected angle.

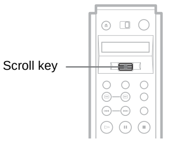
**Hints**
- You can display all the angles on a screen divided into 9 sections and start playback directly from the chosen angle. (page 52).
- You can also select "ANGLE" from the Control Menu (page 14).

**Note**
Depending on the DVD VIDEO, you may not be able to change the angles even if multi-angles are recorded on the disc.

## Displaying the Subtitles

**DVD-V** **DVD-RW**

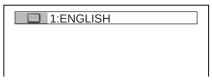
If subtitles are recorded on the discs, you can change the subtitles or turn them on and off whenever you want while playing a DVD.



**1 Toggle the scroll key up or down during playback to display “SUBTITLE” in the LCD screen.**

**2 Point the remote at the player and press down on the scroll key so that ᯤ appears in the LCD screen.**

The following display appears.


1:ENGLISH

**3 Press down on the scroll key repeatedly to select a setting.**

**◆ When playing a DVD VIDEO**

Select the language.

Depending on the DVD VIDEO, the choice of language varies.

When 4 digits are displayed, they indicate a language code. Refer to “Language Code List” on page 92 to see which language the code represents.

**◆ When playing a DVD-RW**

Select “ON.”

**To turn off the subtitles**

Select “OFF” in step 3.

**Hint**

You can also select “SUBTITLE” from the Control Menu (page 14).

**Note**

Depending on the DVD VIDEO, you may not be able to change the subtitles even if multilingual subtitles are recorded on it. You also may not be able to turn them off.

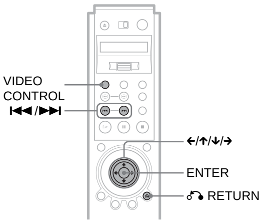
## Adjusting the Picture

### (VIDEO CONTROL) DVD-V DVD-RW VCD

You can adjust the video signal of DVD or VIDEO CD from the player to obtain the picture quality you want.

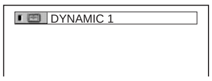
Choose the preset Video Control setting that best suits the program you are watching, or select “MEMORY” to adjust individual picture items, such as color, brightness, etc., creating a fixed set of picture item adjustments for the disc in either case.

As long as “PLAYBACK MEMORY” in “CUSTOM SETUP” is set to “ON” (default), the Video Control settings for up to 300 discs remain in the player’s memory, and will be automatically applied whenever you play the same disc. When you store a Video Control setting for the 301st disc, the setting for the 1st disc is canceled.



**1 Press VIDEO CONTROL during playback.**

The following display appears.


DYNAMIC 1

**2 Press VIDEO CONTROL repeatedly to select the setting you want.**

The default setting is underlined.

- STANDARD: Displays a standard picture.
- DYNAMIC 1: Produces a bold dynamic picture by increasing the picture contrast and the color intensity.
- DYNAMIC 2: Produces a more dynamic picture than DYNAMIC 1 by further increasing the picture contrast and the color intensity.
- CINEMA 1: Enhances details in dark areas by increasing the black level.
- CINEMA 2: White colors become brighter and black colors become richer, and the color contrast is increased.
- MEMORY: Adjusts the picture in greater detail.

**Hints**

- When you watch a movie, “CINEMA 1” or “CINEMA 2” is recommended.
- You can also select “VIDEO CONTROL” from the Control Menu (page 14).

**Note**

Video Control settings for DVD-RWs in VR mode will be canceled when you open the disc tray or when the player enters standby mode.

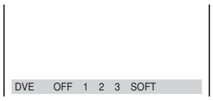
### Adjusting the picture items in “MEMORY”

You can adjust each element of the picture qualities individually.

- DVE (digital video enhancer): Sharpens or softens the outlines of the images. “SOFT” is available only for DVDs.
- BNR (block noise reduction): Reduces “block noise” or mosaic like patterns in the picture.
- Y NR (luminance noise reduction): Reduces noise contained in the luminance element of the video signal.
- C NR (chroma noise reduction): Reduces noise contained in the color element of the video signal.
- CHROMA DELAY: Adjusts colors that appear to have shifted horizontally.
- AV ALIGNMENT: Adjusts delay between the picture and sound.
- PROGRESSIVE 1: Sets a threshold at which the player determines the progressive conversion method. When “COMPONENT OUT” in “SCREEN SETUP” is set to “PROGRESSIVE,” the player automatically detects whether the software is video based or film based, and converts the video signals in the corresponding progressive conversion method. When the set point is closer to “VIDEO,” the video based software conversion is more likely to be selected; when closer to “FILM,” the film based conversion is the likely choice. When set specifically to “VIDEO,” the video based software conversion will be always applied regardless of the software type. See “Glossary” for details about the video based software and film based software (page 88).
- PROGRESSIVE 2: Adjusts the progressive video signals processed under the video based software conversion. Set closer to “STILL” for software containing static pictures such as scenery. Or, set closer to “MOVE” for software containing dynamic moving pictures such as a car chase.
- PICTURE: Changes the contrast.
- BRIGHTNESS: Changes the overall brightness.
- COLOR: Makes the colors deeper or lighter.
- HUE: Changes the color balance.
- GAMMA: Adjusts the brightness of selected areas. See “Adjusting the brightness of selected areas (Gamma Correction)” for details (page 64).

**1 Press VIDEO CONTROL repeatedly to select “MEMORY,” then press ENTER.**

The “DVE” adjustment bar appears.


DVE OFF 1 2 3 SOFT

**2 Press ←/→ to adjust the outline, then press ENTER.**

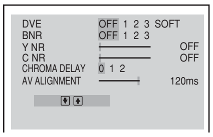
The adjustment is saved, and the “BNR” adjustment bar appears.

**3 Repeat step 2 to adjust “BNR” and the other items such as “Y NR,” and “C NR.”**

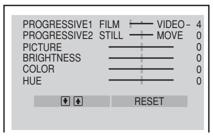
**4 When you reach the “GAMMA” adjustment bar, press ↓.**

Video Control display 1 appears. To go to Video Control display 2, press ↓ again. You can check all the adjustments other than “GAMMA.”

Video Control display 1


DVE OFF 1 2 3 SOFT
BNR OFF 1 2 3
Y NR OFF
C NR OFF
CHROMA DELAY 0 1 2
AV ALIGNMENT 120ms

Video Control display 2


PROGRESSIVE1 FILM VIDEO - 4
PROGRESSIVE2 STILL MOVE 0
PICTURE 0
BRIGHTNESS 0
COLOR 0
HUE 0
RESET

**To turn off the display**

Press RETURN.

➔continued

**Hints**

- To reset the picture items to the default values, press → after step 4 to select “RESET” in Video Control display 2 and press ENTER.
- You can skip the adjustment without saving by pressing ↑/↓ in step 2.
- Video based software, such as TV drama, animation, and live music software are more adequately processed under the video based conversion. Film based software such as movies are better processed under the film based conversion.

**Notes**

- If the outlines of the images on your screen should become blurred, set “BNR” to “OFF.”
- Depending on the disc or the scene being played, the “BNR,” “Y NR,” or “C NR” effect may be hard to discern.
- Depending on the disc or the scene being played, noise found in the disc may become more apparent. If this happens, it is recommended that you use the BNR function with the DVE function. If the condition still does not improve, reduce the DVE level, or select “SOFT” (DVD only).
- Some DVDs contain both video based and film based sections. For example, a DVD may contain a movie taken on film, and a “Making of” sequence taken on video.
- If the progressive format image becomes unclear or unnatural when “MEMORY” is set to “PROGRESSIVE 1” or “PROGRESSIVE 2,” try viewing with “PROGRESSIVE 1” set to “VIDEO.” If this does not improve the picture, view the images in Interlace format through the COMPONENT VIDEO OUT jacks (page 78), or switch to another jack.

### Adjusting the brightness of selected areas (Gamma Correction)

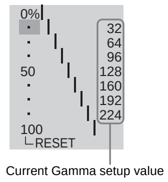
Depending on your TV or viewing environment, images on the screen may lose definition when a certain area of the image is so light that it appears washed out, or so dark that it blends into the surrounding dark areas. By correcting the Gamma value, you can adjust the brightness of selected areas to get a clearer image. While the “BRIGHTNESS” adjustment controls the brightness of the entire image, the “GAMMA” adjustment is useful when only some portions of the image need adjusting.

Example: You are watching a movie that is rich in shadows and you want to see the hidden details of the scenery.

If you use the “BRIGHTNESS” adjustment, the entire image will become brighter, losing definition in the areas that were initially bright. The “GAMMA” adjustment enables you to select the dark part and gradually increase its brightness without sacrificing the overall definition.

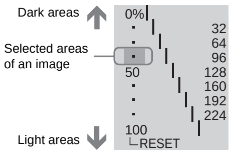
**1 After step 3 of “Adjusting the picture items in MEMORY,” press ↑/↓ to display the “GAMMA,” adjustment bar, and press ENTER or →.**

The “GAMMA” adjustment display appears.



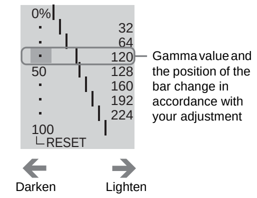
**2 Press ↑/↓ to select areas of an image.**

The upper region adjusts the dark areas and the lower region adjusts the light areas.



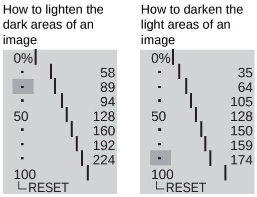
**3** **Press ←/→ to adjust the brightness level of the area that you selected.**

← decreases the level (darkens the area), and → increases the level (lightens the area). The level can be adjusted between 16 and 235. The level for the dark areas can never be greater than the light areas.


0%
32
64
120
50
128
160
192
224
100
└RESET
Gamma value and the position of the bar change in accordance with your adjustment
Darken
Lighten

**4** **Repeat steps 2 and 3 to adjust the brightness level of other areas that you select.**

Try to keep the line that connects the brightness level of each area as smooth and straight as possible, as shown below.


How to lighten the dark areas of an image

0%
58
89
94
50
128
160
192
224
100
└RESET

How to darken the light areas of an image

0%
35
64
105
50
128
150
159
174
100
└RESET

To prevent the image from appearing overly altered, do not give the line any sharp changes. Gradually make the adjustments while viewing the image on your TV screen.
Press ↶ RETURN to stop making adjustments to the image.

**5** **Press ENTER.**

The “GAMMA” adjustment bar appears and the adjusted gamma values are stored in memory.

#### To reset only the gamma value to the default setting

Select “RESET” in the “GAMMA” adjustment display by pressing ↑/↓, and press ENTER.

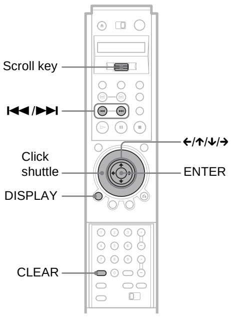
**Hint**

You can move the gamma adjustment display horizontally by pressing ⏮/⏭.

Using Various Additional Functions

## Labeling the Disc DVD-V VCD SA-CD CD

You can label a disc if no text is recorded on the disc (Disc Memo).
You can put a personal title of up to 20 characters on the disc. The Disc Memo can be anything you like, such as a title, musician’s name, category, or date of purchase.



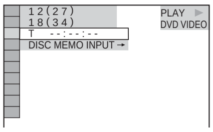
**1** **Insert the disc you want to label.**

**2** **Press DISPLAY.**

The Control Menu appears.

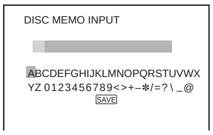
**3** **Press ↑/↓ to select (TIME/MEMO) and press ENTER.**

“DISC MEMO INPUT →” appears.


1 2 ( 2 7 )
1 8 ( 3 4 )
T - - : - - : - -
DISC MEMO INPUT →
PLAY ▶
DVD VIDEO

**4** **Press ↓ to select “DISC MEMO INPUT →” and press ENTER.**

The “DISC MEMO INPUT” display appears.

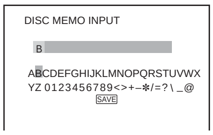

DISC MEMO INPUT

ABCDEFGHIJKLMNOPQRSTUVWX
YZ 0123456789<>+–✻/=?_@
SAVE

**5** **Select a character by pressing ←/↑/↓/→, or by turning the click shuttle.**

The selected character changes the color.

**6** **Press ENTER.**


DISC MEMO INPUT

B

ABCDEFGHIJKLMNOPQRSTUVWX
YZ 0123456789<>+–✻/=?_@
SAVE

**7** **Repeat steps 5 and 6 to input other characters.**

**8** **When you have entered all the characters for a Disc Memo, select “SAVE” by pressing ←/↑/↓/→, and press ENTER.**

The Disc Memo is stored.

#### To turn off the display

Press ↶ RETURN.

#### To erase a character

1 Press ⏮ or ⏭ to move the cursor to the character you want to erase.

2 Press CLEAR.

#### To insert or overwrite a character

1 Press ⏮ or ⏭ to move the cursor to the insertion point or the character you want to correct.

2 Select a correct character by pressing ←/↑/↓/→ or turning the click shuttle.

3 **To insert a character**, press ENTER. **To overwrite**, press ⏮ or ⏭.

#### To check the Disc Memo

Toggle the scroll key up or down to display “TIME/TEXT” in the LCD screen. Then point the remote at the player and press down on the scroll key so that ᯤ appears in the LCD screen. Press down on the scroll key repeatedly until the Disc Memo appears at the bottom of the TV screen.

**Note**

You can label up to 300 discs. When you have the player store over 300 discs in memory, each new Disc Memo erases the oldest Disc Memo from those first stored.

## Locking Discs (CUSTOM PARENTAL CONTROL, PARENTAL CONTROL)

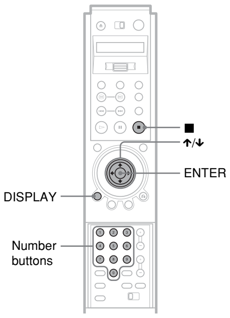
You can set two kinds of playback restrictions for the desired disc.

- Custom Parental Control
  You can set playback restrictions so that the player will not play inappropriate discs.
- Parental Control
  Playback of some DVD VIDEOs can be limited according to a predetermined level, such as the age of the users. Scenes may be blocked or replaced with different scenes.

The same password is used for both Parental Control and Custom Parental Control.

### Custom Parental Control DVD-V VCD SA-CD CD

You can set the same Custom Parental Control password for up to 300 discs. When you set the 301st-disc, the first disc is canceled.



**1** **Insert the disc you want to lock.**

If the disc is playing, press ■ to stop playback.

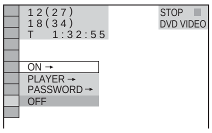
**2** **Press DISPLAY while the player is stopped.**

The Control Menu appears.

→continued

**3** **Press ↑/↓ to select (PARENTAL CONTROL), then press ENTER.**

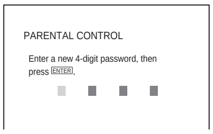
The options for “PARENTAL CONTROL” appear.


1 2 ( 2 7 )
1 8 ( 3 4 )
T 1 : 3 2 : 5 5
STOP ■
DVD VIDEO
ON →
PLAYER →
PASSWORD →
OFF

**4** **Press ↑/↓ to select “ON →,” then press ENTER.**

◆ **If you have not entered a password**

The display for registering a new password appears.

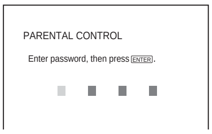

PARENTAL CONTROL

Enter a new 4-digit password, then press ENTER.

Enter a 4-digit password using the number buttons, then press ENTER. The display for confirming the password appears.

◆ **When you have already registered a password**

The display for entering the password appears.


PARENTAL CONTROL

Enter password, then press ENTER.

**5** **Enter or re-enter your 4-digit password using the number buttons, then press ENTER.**

“Custom parental control is set.” appears and then the screen returns to the Control Menu.

#### To turn off the Custom Parental Control function

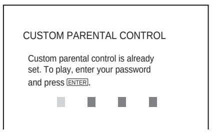
1 Follow steps 1 through 3 of “Custom Parental Control.”

2 Press ↑/↓ to select “OFF →,” then press ENTER.

3 Enter your 4-digit password using the number buttons, then press ENTER.

#### To play a disc for which Custom Parental Control is set

1 Insert the disc for which Custom Parental Control is set.
The “CUSTOM PARENTAL CONTROL” display appears.


CUSTOM PARENTAL CONTROL

Custom parental control is already set. To play, enter your password and press ENTER.

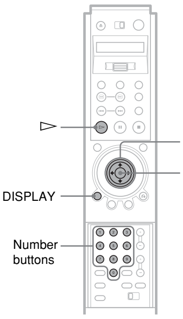
2 Enter your 4-digit password using the number buttons, then press ENTER.
The player is ready for playback.

**Hint**

If you forget your password, enter the 6-digit number “199703” using the number buttons when the “CUSTOM PARENTAL CONTROL” display asks you for your password, then press ENTER. The display will ask you to enter a new 4-digit password.

### Parental Control (limited playback) DVD-V

Playback of some DVD VIDEOs can be limited according to a predetermined level such as the age of the users. The “PARENTAL CONTROL” function allows you to set a playback limitation level.

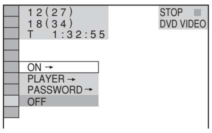


**1 Press DISPLAY while the player is stopped.**

The Control Menu appears.

**2 Press ↑/↓ to select (PARENTAL CONTROL), then press ENTER.**

The options for "PARENTAL CONTROL" appear.

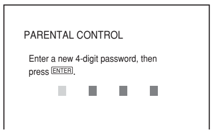


```
12(27)                STOP
18(34)                DVD VIDEO
T   1:32:55

ON →
PLAYER →
PASSWORD →
OFF
```

**3 Press ↑/↓ to select "PLAYER →," then press ENTER.**

**◆ If you have not entered a password**

The display for registering a new password appears.



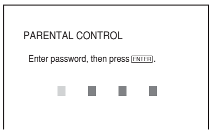
```
PARENTAL CONTROL

Enter a new 4-digit password, then
press ENTER.
```

Enter a 4-digit password using the number buttons, then press ENTER.

The display for confirming the password appears.

**◆ When you have already registered a password**

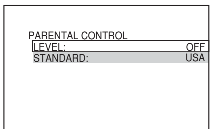
The display for entering the password appears.



```
PARENTAL CONTROL

Enter password, then press ENTER.
```

**4 Enter or re-enter your 4-digit password using the number buttons, then press ENTER.**

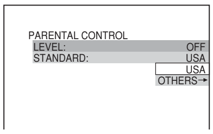
The display for setting the playback limitation level appears.



```
PARENTAL CONTROL
LEVEL:                OFF
STANDARD:             USA
```

**5 Press ↑/↓ to select "STANDARD," then press ENTER.**

The selection items for "STANDARD" are displayed.



```
PARENTAL CONTROL
LEVEL:                OFF
STANDARD:             USA
                      USA
                      OTHERS→
```

**6 Press ↑/↓ to select a geographic area as the playback limitation level, then press ENTER.**

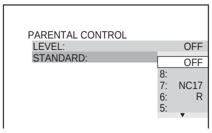
The area is selected.

When you select "OTHERS →," select and enter a standard code in the table on page 70 using the number buttons.

**7 Press ↑/↓ to select "LEVEL," then press ENTER.**

➡continued

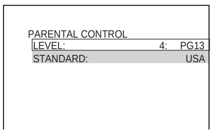
The selection items for "LEVEL" are displayed.



```
PARENTAL CONTROL
LEVEL:                OFF
STANDARD:             OFF
                      8:
                      7:   NC17
                      6:      R
                      5:
```

**8 Select the level you want using ↑/↓, then press ENTER.**

Parental Control setting is complete.



```
PARENTAL CONTROL
LEVEL:             4:  PG13
STANDARD:               USA
```

The lower the value, the stricter the limitation.

### To turn off the Parental Control function

Set "LEVEL" to "OFF" in step 8.

### To play a disc for which Parental Control is set

1 Insert the disc and press ▷.
The display for entering your password appears.

2 Enter your 4-digit password using the number buttons, then press ENTER.
The player starts playback.

**Hint**

If you forget your password, remove the disc and repeat steps 1 to 3 of "Parental Control (limited playback)." When you are asked to enter your password, enter "199703" using the number buttons, then press ENTER. The display will ask you to enter a new 4-digit password. After you enter a new 4-digit password, replace the disc in the player and press ▷. When the display for entering your password appears, enter your new password.

**Notes**

- When you play discs which do not have the Parental Control function, playback cannot be limited on this player.
- Depending on the disc, you may be asked to change the parental control level while playing the disc. In this case, enter your password, then change the level. If the Resume Play mode is canceled, the level returns to the previous level.

### Area Code

| Standard | Code number |
|---|---|
| Argentina | 2044 |
| Australia | 2047 |
| Austria | 2046 |
| Belgium | 2057 |
| Brazil | 2070 |
| Canada | 2079 |
| Chile | 2090 |
| China | 2092 |
| Denmark | 2115 |
| Finland | 2165 |
| France | 2174 |
| Germany | 2109 |
| India | 2248 |
| Indonesia | 2238 |
| Italy | 2254 |
| Japan | 2276 |
| Korea | 2304 |
| Malaysia | 2363 |
| Mexico | 2362 |
| Netherlands | 2376 |
| New Zealand | 2390 |
| Norway | 2379 |
| Pakistan | 2427 |
| Philippines | 2424 |
| Portugal | 2436 |
| Russia | 2489 |
| Singapore | 2501 |
| Spain | 2149 |
| Sweden | 2499 |
| Switzerland | 2086 |
| Thailand | 2528 |
| United Kingdom | 2184 |

## Changing the password

**1 Press DISPLAY while the player is stopped.**

The Control Menu appears.

**2 Press ↑/↓ to select (PARENTAL CONTROL), then press ENTER.**

The options for "PARENTAL CONTROL" appear.

**3 Press ↑/↓ to select "PASSWORD →," then press ENTER.**

The display for entering the password appears.

**4 Enter your 4-digit password using the number buttons, then press ENTER.**

**5 Enter a new 4-digit password using the number buttons, then press ENTER.**

**6 To confirm your password, re-enter it using the number buttons, then press ENTER.**

### If you make a mistake entering your password

Press ← before you press ENTER and input the correct number.

### If you make a mistake

Press ⤺ RETURN.

### To turn off the display

Press DISPLAY repeatedly until the display is turned off.

# Operation Sound Effects

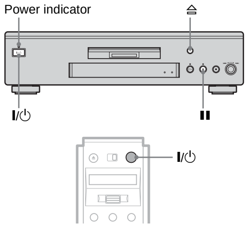
### (Sound Feedback)

The player beeps when the following operations are performed.

The default setting of the Sound Feedback function is set to off.

| Operation | Operation sound |
|---|---|
| Power is turned on | One beep |
| Power is turned off | Two beeps |
| ▷ is pressed | One beep |
| ❚❚ is pressed | Two beeps |
| Playback is stopped | One long beep |
| Operation is not possible | Three beeps |

## Setting Sound Feedback



**1 Press I/⏻ on the player or the remote.**

The power indicator lights up in green. When there is a disc in the player, press ≜ and remove the disc. Then press ≜ again to close the disc tray.

**2 Press and hold ❚❚ on the player for more than two seconds.**

You will hear one beep and the Sound Feedback function is turned on.

### To turn off the Sound Feedback function

When there is no disc in the player, press and hold ❚❚ on the player for more than two seconds. You will hear two beeps and the Sound Feedback function is turned off.

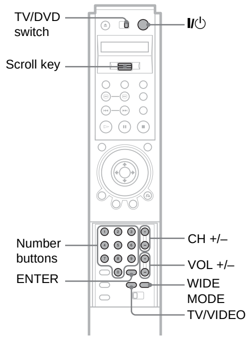
# Controlling Your TV or AV Amplifier (Receiver) With the Supplied Remote

By adjusting the remote signal, you can control your TV with the supplied remote. If you connect the player to an AV amplifier (receiver), you can control the volume with the supplied remote.

**Notes**

- Depending on the connected unit, you may not be able to correctly control your TV or AV amplifier (receiver) using some of the buttons below.
- If you enter a new code number, the code number previously entered will be erased.
- When you replace the batteries of the remote, the code number you have set may be reset to the default setting. Set the appropriate code number again.

## Controlling TVs with the remote



**1 Slide the TV/DVD switch to TV.**

**2 While holding down I/⏻, press down on the scroll key.**

"TV P-1" (default) appears in the LCD screen.

**3 Release I/⏻.**

**4 Toggle the scroll key up or down to select your TV's manufacturer code (see "Code numbers of controllable TVs" below).**

**5 Press down on the scroll key.**

The manufacturer code flashes and the remote is set.

When the TV/DVD switch is set to TV, the remote performs the following:

| | |
|---|---|
| I/⏻ | Turns the TV on or off |
| VOL +/– | Adjusts the volume of the TV |
| WIDE MODE | Switches to or from the wide mode of a Sony wide TV |
| TV/VIDEO | Switches the TV's input source between the TV and other input sources |
| CH +/–, number buttons and ENTER | Selects the channel of the TV |

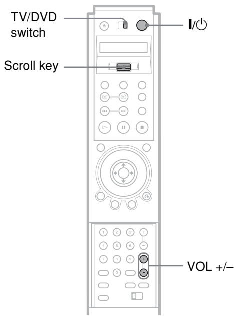
### Code numbers of controllable TVs

If more than one code number is listed, try entering them one at a time until you find the one that works with your TV.

| Manufacturer | Code number |
|---|---|
| Sony (default) | 1 |
| Akai | 4 |
| AOC | 4 |
| Centurion | 12 |
| Coronado | 3 |
| Curtis-Mathes | 12 |
| Daytron | 12 |
| Emerson | 3,4,14 |
| Fisher | 11 |
| General Electric | 6,10 |
| Gold Star | 3,4,17 |
| Hitachi | 2,3 |
| J.C.Penney | 4,12 |
| JVC | 9 |
| KMC | 3 |
| Magnavox | 3,8,12 |
| Marantz | 4,13 |

| | |
|---|---|
| MGA/Mitsubishi | 4,12,13,17 |
| NEC | 4,12 |
| Panasonic | 6,19 |
| Philco | 3,4 |
| Philips | 8,21 |
| Pioneer | 16 |
| Portland | 3 |
| Proscan | 10 |
| Quasar | 6,18 |
| Radio Shack | 5,14 |
| RCA | 4,10 |
| Sampo | 12 |
| Samsung | 3,12,20 |
| Sanyo | 11,14 |
| Scott | 12 |
| Sears | 7,10,11 |
| Sharp | 3,5,18 |
| Sylvania | 8,12 |
| Teknika | 3,8,14 |
| Toshiba | 7 |
| Wards | 3,4,12 |
| Yorx | 12 |
| Zenith | 15 |

## Controlling the volume of your AV amplifier (receiver) with the remote



**1** **Slide the TV/DVD switch to DVD.**

**2** **While holding down I/⏻, press down on the scroll key.**
"AV P-90" (default) appears in the LCD screen.

**3** **Release I/⏻.**

**4** **Toggle the scroll key up or down to select your AV amplifier (receiver)'s manufacturer code (see "Code numbers of controllable AV amplifiers (receivers)" below).**

**5** **Press down on the scroll key.**
The manufacturer code flashes and the remote is set. The VOL +/– buttons control the AV amplifier's volume.

◆ **If you want to control the TV's volume**
Slide the TV/DVD switch to TV.

### Code numbers of controllable AV amplifiers (receivers)

If more than one code number is listed, try entering them one at a time until you find the one that works with your AV amplifier (receiver).

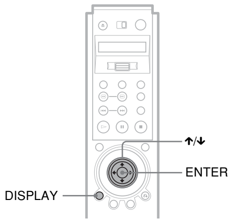
| Manufacturer | Code number |
|---|---|
| Sony | 80, 88, 89, 91 |
| Denon | 84, 85, 86 |
| Kenwood | 92, 93 |
| Onkyo | 81, 82, 83 |
| Pioneer | 99 |
| Sansui | 87 |
| Technics | 97, 98 |
| Yamaha | 94, 95, 96 |

**Hint**
If you want to control the TV's volume even when the TV/DVD switch is set to DVD, repeat steps 1 through 5 and enter the code number 90 (default).

# Using the Setup Display

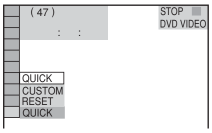
By using the Setup Display, you can make various adjustments to items such as picture and sound. You can also set a language for the subtitles and the Setup Display, among other things. For details on each Setup Display item, see pages from 76 to 84.

**Note**
Playback settings stored in the disc take priority over the Setup Display settings and not all the functions described may work.

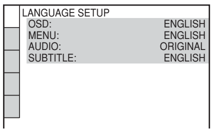


**1** **Press DISPLAY while the player is stopped.**
The Control Menu appears.

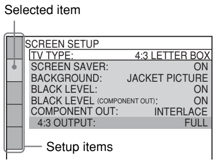
**2** **Press ↑/↓ to select (SETUP), then press ENTER.**
The options for "SETUP" appear.


( 47 )
: :
STOP
DVD VIDEO
QUICK
CUSTOM
RESET
QUICK

**3** **Press ↑/↓ to select "CUSTOM," then press ENTER.**
The Setup Display appears.

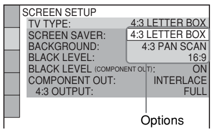

LANGUAGE SETUP
OSD: ENGLISH
MENU: ENGLISH
AUDIO: ORIGINAL
SUBTITLE: ENGLISH

**4** **Press ↑/↓ to select the setup item from the displayed list: "LANGUAGE SETUP," "SCREEN SETUP," "CUSTOM SETUP," "AUDIO SETUP," or "SPEAKER SETUP." Then press ENTER.**
The Setup item is selected.
Example: "SCREEN SETUP"



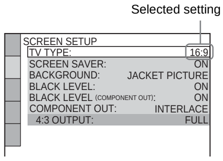
SCREEN SETUP
TV TYPE: 4:3 LETTER BOX
SCREEN SAVER: ON
BACKGROUND: JACKET PICTURE
BLACK LEVEL: ON
BLACK LEVEL (COMPONENT OUT): ON
COMPONENT OUT: INTERLACE
4:3 OUTPUT: FULL

**5** **Select an item using ↑/↓, then press ENTER.**
The options for the selected item appear.
Example: "TV TYPE"



SCREEN SETUP
TV TYPE: 4:3 LETTER BOX
SCREEN SAVER: 4:3 LETTER BOX
BACKGROUND: 4:3 PAN SCAN
BLACK LEVEL: 16:9
BLACK LEVEL (COMPONENT OUT): ON
COMPONENT OUT: INTERLACE
4:3 OUTPUT: FULL

**6** **Select a setting using ↑/↓, then press ENTER.**
The setting is selected and setup is complete.
Example: "16:9"



SCREEN SETUP
TV TYPE: 16:9
SCREEN SAVER: ON
BACKGROUND: JACKET PICTURE
BLACK LEVEL: ON
BLACK LEVEL (COMPONENT OUT): ON
COMPONENT OUT: INTERLACE
4:3 OUTPUT: FULL

### To turn off the display

Press DISPLAY repeatedly until the display is turned off.

### To enter the Quick Setup mode

Select "QUICK" in step 3. Follow from step 5 of the Quick Setup explanation to make basic adjustments (page 31).

### To reset all the "SETUP" settings

**1** Select "RESET" in step 3 and press ENTER.

**2** Select "YES" using ↑/↓.
You can also quit the process and return to the Control Menu by selecting "NO" here.

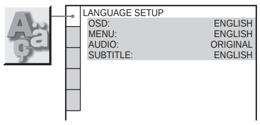
**3** Press ENTER.
All the settings explained on pages 76 to 84 return to the default settings. Do not press I/⏻ while resetting the player, which takes a few seconds to complete.

# Setting the Display or Sound Track Language

## (LANGUAGE SETUP)

"LANGUAGE SETUP" allows you to set various languages for the on-screen display or sound track.

Select "LANGUAGE SETUP" in the Setup Display. To use the display, see "Using the Setup Display" (page 75).


LANGUAGE SETUP
OSD: ENGLISH
MENU: ENGLISH
AUDIO: ORIGINAL
SUBTITLE: ENGLISH

◆ **OSD (On-Screen Display)**
Switches the display language on the screen.

◆ **MENU (DVD VIDEO only)**
Switches the language for the disc's menu.

◆ **AUDIO (DVD VIDEO only)**
Switches the language of the sound track. When you select "ORIGINAL," the language given priority in the disc is selected.

◆ **SUBTITLE (DVD VIDEO only)**
Switches the language of the subtitle recorded on the DVD VIDEO.
When you select "AUDIO FOLLOW," the language for the subtitles changes according to the language you selected for the sound track.

**Hint**
If you select "OTHERS →" in "MENU," "SUBTITLE," or "AUDIO," select and enter a language code from "Language Code List" on page 92 using the number buttons.

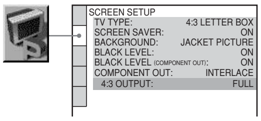
**Note**
When you select a language in "MENU," "SUBTITLE," or "AUDIO" that is not recorded on a DVD VIDEO, one of the recorded languages will be automatically selected.

## Settings for the Display

### (SCREEN SETUP)

Choose settings according to the TV to be connected.

Select “SCREEN SETUP” in the Setup Display. To use the display, see “Using the Setup Display” (page 75).
The default settings are underlined.



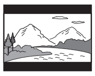
SCREEN SETUP
TV TYPE: 4:3 LETTER BOX
SCREEN SAVER: ON
BACKGROUND: JACKET PICTURE
BLACK LEVEL: ON
BLACK LEVEL (COMPONENT OUT): ON
COMPONENT OUT: INTERLACE
4:3 OUTPUT: FULL

### ◆ TV TYPE

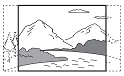
Selects the aspect ratio of the connected TV (4:3 standard or wide).

| | |
|---|---|
| 4:3 LETTER BOX | Select this when you connect a 4:3 screen TV. Displays a wide picture with bands on the upper and lower portions of the screen. |
| 4:3 PAN SCAN | Select this when you connect a 4:3 screen TV. Automatically displays a wide picture on the entire screen and cuts off the portions that do not fit. |
| 16:9 | Select this when you connect a wide-screen TV or a TV with a wide mode function. |

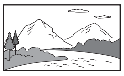
4:3 LETTER BOX



4:3 PAN SCAN



16:9



**Note**

Depending on the DVD, “4:3 LETTER BOX” may be selected automatically instead of “4:3 PAN SCAN” or vice versa.

### ◆ SCREEN SAVER

The screen saver image appears when you leave the player in pause or stop mode for 15 minutes, or when you play back a Super Audio CD, CD, or DATA CD (MP3 audio) for more than 15 minutes. The screen saver will help prevent your display device from becoming damaged (ghosting). Press ▷ to turn off the screen saver image.

| | |
|---|---|
| ON | Turns on the screen saver function. |
| OFF | Turns off the screen saver function. |

### ◆ BACKGROUND

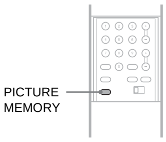
Selects the background color or picture that appears on the TV screen when the player is in stop mode or playing a Super Audio CD, CD, or DATA CD (MP3 audio).

| | |
|---|---|
| JACKET PICTURE | The jacket picture (still picture) appears, but only when the jacket picture is already recorded on the disc (CD-EXTRA, etc.). If the disc does not contain a jacket picture, the “GRAPHICS” picture appears. |
| PICTURE MEMORY | Your favorite picture appears in the background. To store a scene in memory, see “To store a picture in memory” below. |
| GRAPHICS | A preset picture stored in the player appears. |
| BLUE | The background color is blue. |
| BLACK | The background color is black. |

#### To store a picture in memory

The player can store one scene in memory for the background.
During playback, when you find a scene to be stored in memory, press PICTURE MEMORY.
The picture is stored in memory.

➡continued



**Note**

If you operate the player while the picture is being stored in memory, the player will fail to store the picture.

### ◆ BLACK LEVEL

Selects the black level (setup level) for the video (NTSC) signals output from the jacks other than COMPONENT VIDEO OUT.

| | |
|---|---|
| ON | Sets the black level of the output signal to the standard level. |
| OFF | Lowers the standard black level. Use this when the picture becomes too white. |

### ◆ BLACK LEVEL (COMPONENT OUT)

Selects the black level (setup level) for the video (NTSC) signals output from the COMPONENT VIDEO OUT jacks. You cannot select this when “PROGRESSIVE” is selected in “COMPONENT OUT” (see below).

| | |
|---|---|
| ON | Sets the black level of the output signal to the standard level. |
| OFF | Lowers the standard black level. Use this when the picture becomes too white. |

### ◆ COMPONENT OUT

Selects the type of signal output from the COMPONENT VIDEO OUT jacks on the player. See page 89 for more information about the different types.

| | |
|---|---|
| INTERLACE | Select this when you are connected to a standard (interlace format) TV. |
| PROGRESSIVE | Select this when you have a TV that can accept progressive signals. |

#### To switch the video signal format

If you have selected “PROGRESSIVE” for a TV that does not accept signals in progressive format 480p, or if the software’s video signals are not suited for progressive video signal conversion, view the image in Interlace format.

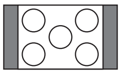
1. Set the COMPONENT VIDEO OUT/ SCAN SELECT switch on the rear panel of the player to “INTERLACE.”
2. Set “COMPONENT OUT” to “INTERLACE.”
3. Reset the COMPONENT VIDEO OUT/ SCAN SELECT switch to “SELECTABLE.”
   Normally leave the switch in this position when using the COMPONENT VIDEO OUT jacks.

#### When “PROGRESSIVE” is selected in “COMPONENT OUT”

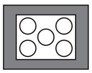
- 4:3 OUTPUT

Adjust this when you watch progressive signals on a standard 4:3 aspect ratio television. If you can change the aspect ratio on your progressive format (480p) compatible TV, change the setting on your TV, not the player.

| | |
|---|---|
| FULL | Select this when you can change the aspect ratio on your TV. |
| NORMAL | Select this when you cannot change the aspect ratio on your TV. Shows a 16:9 aspect ratio signal with black bands on left and right sides of the image, and a 4:3 aspect ratio signal with black bands on all sides of the image. |



16:9 aspect ratio TV



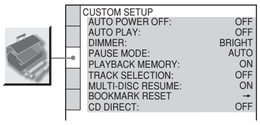
4:3 aspect ratio TV

---

## Custom Settings (CUSTOM SETUP)

Use this to set up playback related and other settings.

Select “CUSTOM SETUP” in the Setup Display. To use the display, see “Using the Setup Display” (page 75).
The default settings are underlined.



CUSTOM SETUP
AUTO POWER OFF: OFF
AUTO PLAY: OFF
DIMMER: BRIGHT
PAUSE MODE: AUTO
PLAYBACK MEMORY: ON
TRACK SELECTION: OFF
MULTI-DISC RESUME: ON
BOOKMARK RESET →
CD DIRECT: OFF

### ◆ AUTO POWER OFF

Switches the Auto Power Off setting on or off.

| | |
|---|---|
| OFF | Switches this function off. |
| ON | The player enters standby mode when left in stop mode for more than 30 minutes. |

### ◆ AUTO PLAY

Switches the Auto Play setting on or off. This function is useful when the player is connected to a timer (not supplied).

| | |
|---|---|
| OFF | Switches this function off. |
| ON | Automatically starts playback when the player is turned on. |

### ◆ DIMMER

Adjusts the lighting of the front panel display.

| | |
|---|---|
| BRIGHT | Makes the lighting bright. |
| DARK | Makes the lighting dark. |
| AUTO DARK | Makes the lighting dark if you do not operate the player or the remote for a short while. |
| AUTO OFF | Turns off the lighting if you do not operate the player or the remote for a short while. |
| OFF | Turns off the lighting. |

### ◆ PAUSE MODE (DVD VIDEO/DVD-RW only)

Selects the picture in pause mode.

| | |
|---|---|
| AUTO | The picture, including subjects that move dynamically, is output with no jitter. Normally select this position. |
| FRAME | The picture, including subjects that do not move dynamically, is output in high resolution. |

### ◆ PLAYBACK MEMORY

The player can store “SUBTITLE” and other settings of each disc for up to 300 discs (Playback Memory).
Set this function “ON” or “OFF.”

| | |
|---|---|
| ON | Stores the settings in memory when you eject the disc. |
| OFF | Does not store the settings in memory. |

The following settings are stored in memory.
– ANGLE (page 60)*
– AUDIO (page 57)*
– BOOKMARK (page 51)**
– DISC MEMO (page 66)***
– VIDEO CONTOROL (page 62)**
– SUBTITLE (page 61)*
* DVD VIDEO only
** DVD VIDEO/VIDEO CD only
*** DVD VIDEO/VIDEO CD/Super Audio CD/ CD only

**Note**

The player can store the settings of up to 300 discs. When you store the setting of disc number 301, the first disc setting is canceled.

### ◆ TRACK SELECTION (DVD VIDEO only)

Gives the sound track which contains the highest number of channels priority when you play a DVD VIDEO on which multiple audio formats (PCM, DTS, or Dolby Digital format) are recorded.

| | |
|---|---|
| OFF | No priority given. |
| AUTO | Priority given. |

➡continued

**Notes**

- When you set the item to “AUTO,” the language may change. The “TRACK SELECTION” setting has higher priority than the “AUDIO” settings in “LANGUAGE SETUP” (page 76).
- If PCM, DTS, and Dolby Digital sound tracks have the same number of channels, the player selects PCM, DTS, and Dolby Digital sound tracks in this order.

### ◆ MULTI-DISC RESUME (DVD VIDEO/ VIDEO CD only)

Switches the Multi-disc Resume setting on or off. Resume playback point can be stored in memory for up to 300 different DVD VIDEO/ VIDEO CD discs (page 38).

| | |
|---|---|
| ON | Stores the resume settings in memory for up to 300 discs (The settings remain in memory even if you select OFF.) |
| OFF | Does not store the resume settings in memory. Playback restarts at the resume point only for the current disc in the player. |

### ◆ BOOKMARK RESET→

Resets the bookmarks. Select this and press ENTER. The “BOOKMARK RESET” display appears. Press ENTER again to erase all of the bookmarks in all of the discs.

### ◆ CD DIRECT

Eliminates the use of unnecessary circuits when playing CDs. This setting will be activated when you open or close the disc tray.
This function affects the output from the following jacks:
– AUDIO OUT L/R 1/2 jacks
– 5.1CH OUTPUT jacks

| | |
|---|---|
| OFF | Select this when playing CD discs, including CDs with DTS tracks. |
| ON | Eliminates the use of unnecessary circuits when playing CDs. |

**Note**

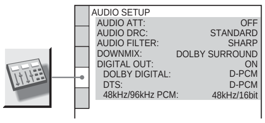
If you select “ON” when playing CDs with DTS tracks, the sound will become noisy.

## Settings for the Sound

### (AUDIO SETUP)

“AUDIO SETUP” allows you to set the sound according to the playback and connection conditions.

Select “AUDIO SETUP” in the Setup Display. To use the display, see “Using the Setup Display” (page 75).
The default settings are underlined.



AUDIO SETUP
AUDIO ATT: OFF
AUDIO DRC: STANDARD
AUDIO FILTER: SHARP
DOWNMIX: DOLBY SURROUND
DIGITAL OUT: ON
DOLBY DIGITAL: D-PCM
DTS: D-PCM
48kHz/96kHz PCM: 48kHz/16bit

### ◆ AUDIO ATT (attenuation)

If the playback sound is distorted, set this item to “ON.” The player reduces the audio output level.
This function affects the output of the following jacks:
– AUDIO OUT L/R 1/2 jacks
– 5.1CH OUTPUT jacks

| | |
|---|---|
| OFF | Normally select this position. |
| ON | Select this when the playback sound from the speakers is distorted. |

### ◆ AUDIO DRC (Dynamic Range Control) (DVD VIDEO/DVD-RW only)

Allows smaller sound to be heard at low volume when playing a DVD that conforms to “AUDIO DRC.” This affects the output from the following jacks:
– AUDIO OUT L/R 1/2 jacks
– 5.1CH OUTPUT jacks
– DIGITAL OUT (OPTICAL or COAXIAL) jack only when “DOLBY DIGITAL” is set to “D-PCM” (page 81).

| | |
|---|---|
| STANDARD | Normally select this position. |
| TV MODE | Makes the low sounds clear even if you turn the volume down. |
| WIDE RANGE | Gives you the feeling of being at a live performance. |

### ◆ AUDIO FILTER (except Super Audio CD)

Selects the digital filter to reduce noise above 22.05 kHz (Sampling frequency (Fs) of the audio source is 44.1 kHz), 24 kHz (Fs is 48 kHz), or 48 kHz (Fs is above 96 kHz).

| | |
|---|---|
| SHARP | Provides a wide frequency range and spatial feeling. |
| SLOW | Provides smooth and warm sound. |

**Note**

There may be little effect by changing the digital filter depending on the disc or playback environment.

### ◆ DOWNMIX (DVD VIDEO/DVD-RW only)

Switches the method for mixing down to 2 channels when you play a DVD which has rear sound elements (channels) or is recorded in Dolby Digital format. For details on the rear signal components, see "Displaying the audio information of the disc" (page 58). This function affects the output of the following jacks:
– AUDIO OUT L/R 1/2 jacks
– DIGITAL OUT (OPTICAL or COAXIAL) jack when "DOLBY DIGITAL" and "DTS" is set to "D-PCM" (page 81).

| | |
|---|---|
| DOLBY SURROUND | Select this when the player is connected to an audio component that conforms to Dolby Surround (Pro Logic). |
| NORMAL | Select this when the player is connected to an audio component that does not conform to Dolby Surround (Pro Logic). |

### ◆ DIGITAL OUT

Select this if audio signals are to be output via the DIGITAL OUT (OPTICAL or COAXIAL) jack.

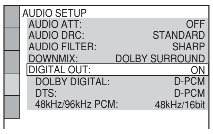
| | |
|---|---|
| ON | Normally select this position. When you select "ON," see "To set the digital output signal" for further settings. |
| OFF | The influence of the digital circuit upon the analog circuit is minimal. |

**Note**

Super Audio CD audio signals are not output from a digital jack.

### To set the digital output signal

The following switch the method of outputting audio signals when you connect a component such as an amplifier (receiver) or MD deck with a digital input jack.
For connection details, see page 24.
Select "DOLBY DIGITAL," "DTS," and "48 kHz/96 kHz PCM" after setting "DIGITAL OUT" to "ON."



```
AUDIO SETUP
 AUDIO ATT:                        OFF
 AUDIO DRC:                   STANDARD
 AUDIO FILTER:                   SHARP
 DOWNMIX:              DOLBY SURROUND
 DIGITAL OUT:                       ON
  DOLBY DIGITAL:                 D-PCM
  DTS:                           D-PCM
  48kHz/96kHz PCM:         48kHz/16bit
```

If you connect a component that does not conform to the selected audio signal, a loud noise (or no sound) will come out from the speakers, damaging your ears or speakers.

- DOLBY DIGITAL (DVD VIDEO/DVD-RW only)

Selects the type of Dolby Digital signal.

| | |
|---|---|
| D-PCM | Select this when the player is connected to an audio component without a built-in Dolby Digital decoder. You can select whether the signals conform to Dolby Surround (Pro Logic) or not by making adjustments to the "DOWNMIX" item in "AUDIO SETUP" (page 81). |
| DOLBY DIGITAL | Select this when the player is connected to an audio component with a built-in Dolby Digital decoder. |

➔continued

- DTS (DVD VIDEO only)

Selects the type of DTS signal.

| | |
|---|---|
| D-PCM | Select this when the player is connected to an audio component without a built-in DTS decoder. |
| DTS | Select this when the player is connected to an audio component with a built-in DTS decoder. |

- 48kHz/96kHz PCM (DVD VIDEO only)

Selects the sampling frequency of the audio signal.

| | |
|---|---|
| 48kHz/16bit | The audio signals of DVD VIDEOs are always converted to 48kHz/16bit. |
| 96kHz/24bit | All types of signals including 96kHz/24bit are output in their original format. However, if the signal is encrypted for copyright protection purposes, the signal is only output as 48kHz/16bit. |

**Notes**

- Even if you set "48kHz/96kHz PCM" to "96kHz/24bit," the sampling frequency is converted to 48kHz/16bit when a "SURROUND" mode (page 59) is selected.
- The analog audio signals from the AUDIO OUT L/R jacks and 5.1CH OUTPUT jacks are not affected by this setting and keep their original sampling frequency level.

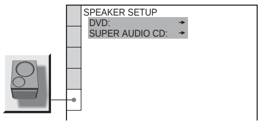
## Settings for the Speakers

### (SPEAKER SETUP)

To obtain the best possible surround sound, set the size of the speakers you have connected and their distance from your listening position. Then use the test tone to adjust the volume of the speakers to the same level.
This setting is effective when connecting the speaker with 5.1 CH OUTPUT jacks (page 29).

You can create two different Speaker Setup settings, one for Super Audio CDs and one for all other types of discs.
When nothing is set in "SUPER AUDIO CD," the "DVD" setting you have set becomes effective when you play Super Audio CDs.

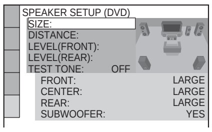
**1 Follow steps 1 through 4 of "Using the setup display" (page 75) to select "SPEAKER SETUP" in the Setup display.**



```
SPEAKER SETUP
 DVD:                  →
 SUPER AUDIO CD:       →
```

**2 Select "DVD" or "SUPER AUDIO CD" using ↑/↓, then press ENTER.**

Example: when "DVD" is selected.



```
SPEAKER SETUP (DVD)
 SIZE:
 DISTANCE:
 LEVEL(FRONT):
 LEVEL(REAR):
 TEST TONE:       OFF
   FRONT:                   LARGE
   CENTER:                  LARGE
   REAR:                    LARGE
   SUBWOOFER:                 YES
```

**3 Set the following items in the order that they are explained below.**

The default settings are underlined.

### To return to the default setting

Select the item, then press CLEAR. Note that only the "SIZE" setting does not return to the default setting.

### ◆ SIZE

Selects the size of the speakers.

- FRONT

| | |
|---|---|
| LARGE | Normally select this position. |
| SMALL | Select this when the speaker cannot reproduce adequate bass frequencies. |

- CENTER

| | |
|---|---|
| LARGE | Normally select this position. |
| SMALL | Select this when the speaker cannot reproduce adequate bass frequencies. |
| NONE | Select this if you do not connect a center speaker. |

- REAR

| | |
|---|---|
| LARGE | Normally select this position. |
| SMALL | Select this when the speaker cannot reproduce adequate bass frequencies. |
| NONE | Select this if you do not connect rear speakers. |

- SUBWOOFER

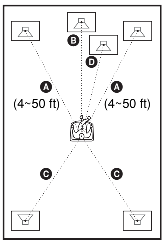
| | |
|---|---|
| YES | Select this if you connect a subwoofer to output the LFE (low frequency effect) signals from the subwoofer. |
| NONE | Select this if you do not connect a subwoofer. |

**Notes**

- The cut off frequency for the subwoofer is fixed at 120 Hz.
- If your speakers are too small to reproduce low bass frequencies, utilize a subwoofer for low frequency sound. When you set the speaker settings to "SMALL," the bass redirection circuitry will be activated and the bass frequencies for the speakers are output from the subwoofer.
- Even if there are fewer than 6 speakers connected, the player distributes the audio signal components to the front speakers.

### ◆ DISTANCE

Sets the distance from your listening position to the speakers.
Set the distance to your front speakers in "FRONT" first (Ⓐ). Values in "CENTER" (center speaker), "REAR" (rear speaker), and "SUBWOOFER" will automatically change to the same value (Ⓑ, Ⓒ, and Ⓓ). Then adjust these values to reflect the actual distance to your center speaker, rear speakers, and subwoofer.



Be sure to change the value in the Setup Display each time you move the speakers. Start from the front speaker. The default adjustments are in parentheses.

| | |
|---|---|
| FRONT (10 ft) | Set this between 4 and 50 feet in 0.25 foot increments. |
| CENTER (10 ft) | Set this within ±6 feet of the "FRONT" setting in 0.25 foot increments. For example, if "FRONT" is set to 6 feet, "CENTER" can be set between 0 and 12 feet. |
| REAR (10 ft) | Set this within –18 feet and +6 feet of the "FRONT" setting in 0.25 foot increments. For example, if "FRONT" is set to 17 feet, "REAR" can be set between –1 and 23 feet. |
| SUBWOOFER (10 ft) | Set this within –18 and +6 feet of the "FRONT" setting in 0.25 foot increments. For example, if "FRONT" is set to 18 feet, "REAR" can be set between 0 and 24 feet. |

➔continued

**Note**

If each of the front or rear speakers are not placed at an equal distance from your listening position, set the distance according to the closest speaker.

### ◆ LEVEL (FRONT)

Varies the level of the front speakers. Be sure to set "TEST TONE" to "ON" for easy adjustment.
The default adjustments are in parentheses.

| | |
|---|---|
| L (0 dB) | Set this between –6 dB and 0 dB in 0.5 dB increments. |
| R (0 dB) | Set this between –6 dB and 0 dB in 0.5 dB increments. |
| CENTER (0 dB) | Set this between –12 dB and 0 dB in 0.5 dB increments. |
| SUBWOOFER (DVD: –5 dB/ SUPER AUDIO CD: 0 dB) | For DVDs:<br>(When "SIZE" are set to the default settings):<br>Set this between –10 dB and +10 dB in 0.5 dB increments.<br>(When "SIZE" are not set to the default settings):<br>Set this between –15 dB and +5 dB in 0.5 dB increments.<br>For Super Audio CDs:<br>Set this between –10 dB and +10 dB in 0.5 dB increments. |

### ◆ LEVEL (REAR)

Varies the level of the rear speakers. Be sure to set "TEST TONE" to "ON" for easy adjustment.
The default adjustments are in parentheses.

| | |
|---|---|
| L (0 dB) | Set this between –12 dB and 0 dB in 0.5 dB increments. |
| R (0 dB) | Set this between –12 dB and 0 dB in 0.5 dB increments. |

### To adjust the volume of all the speakers at one time

Use the amplifier's (receiver's) volume control.

### ◆ TEST TONE

The speakers will emit a test tone. Use this when you use the 5.1CH OUTPUT jacks and adjust "LEVEL (FRONT)" and "LEVEL (REAR)."

| | |
|---|---|
| OFF | The test tone is not emitted from the speakers. |
| ON | The test tone is emitted from each speaker in sequence while adjusting level. |

## Adjusting the speaker volume and level

**1 Select "SPEAKER SETUP" in the Setup Display.**

**2 Select "TEST TONE" and set to "ON."**

You will hear the test tone from each speaker in sequence.

**3 From your listening position, select "LEVEL (FRONT)" or "LEVEL (REAR)" and adjust the value using ↑/↓.**

The test tone is emitted from both left and right speakers simultaneously.

**4 Select "TEST TONE" and set to "OFF" to turn off the test tone.**

**Note**

The test tone signals are not output from the digital jack.

# Troubleshooting

If you experience any of the following difficulties while using the player, use this troubleshooting guide to help remedy the problem before requesting repairs. Should any problem persist, consult your nearest Sony dealer.

## Power

### The power is not turned on.

- ➡ Check that the AC power cord is connected securely.

## Picture

### There is no picture/picture noise appears.

- ➡ Re-connect the connecting cord securely.
- ➡ The connecting cords are damaged.
- ➡ Check the connection to your TV (page 21) and switch the input selector on your TV so that the signal from the player appears on the TV screen.
- ➡ The disc is dirty or flawed.
- ➡ If the picture output from your player goes through your VCR to get to your TV or if you are connected to a combination TV/VIDEO player, the copy-protection signal applied to some DVD programs could affect picture quality. If you still experience problems even when you connect your player directly to your TV, please try connecting your player to your TV's S VIDEO input (page 21).
- ➡ You have set "COMPONENT OUT" in "SCREEN SETUP" to "PROGRESSIVE" even though your TV cannot accept the signal in progressive format. In this case, set the COMPONENT VIDEO OUT/SCAN SELECT switch on the rear panel of the player to INTERLACE. Then set "COMPONENT OUT" to "INTERLACE" after you can see the TV screen correctly, and reset the COMPONENT VIDEO OUT/SCAN SELECT switch to SELECTABLE.
- ➡ Even if your TV is compatible with progressive format 480p signals, the image may be affected when you set "COMPONENT OUT" to "PROGRESSIVE." In this case, set "COMPONENT OUT" to "INTERLACE."
- ➡ You have selected VIDEO OFF (page 35).

### The picture does not fill the screen, even though the aspect ratio is set in "TV TYPE" under "SCREEN SETUP."

- ➡ The aspect ratio of the disc is fixed on your DVD.

## Sound

### There is no sound.

- ➡ Re-connect the connecting cord securely.
- ➡ The connecting cord is damaged.
- ➡ The player is connected to the wrong input jack on the amplifier (receiver) (page 27, 28, 29).
- ➡ The amplifier (receiver) input is not correctly set.
- ➡ The player is in pause mode or in Slow-motion Play mode.
- ➡ The player is in fast forward or fast reverse mode.
- ➡ If the audio signal does not come through the DIGITAL OUT (OPTICAL or COAXIAL) jack, check the audio settings (page 81).
- ➡ Super Audio CD audio signals are not output from the digital jack.

### Sound distortion occurs.

- ➡ Set "AUDIO ATT" in "AUDIO SETUP" to "ON" (page 80).

### The sound volume is low.

- ➡ The sound volume is low on some DVDs. The sound volume may improve if you set "AUDIO DRC" to "TV MODE" (page 80).
- ➡ Set "AUDIO ATT" in "AUDIO SETUP" to "OFF" (page 80).

### The surround effect is difficult to hear when you are playing a Dolby Digital, or DTS sound track.

- ➡ Check the speaker connections and setting (page 29, 31, 81).
- ➡ The 5.1 channel sound is not recorded on the disc being played.

➡continued

### The sound comes from the center speaker only.

- ➡ Depending on the disc, the sound may come from the center speaker only.

## Operation

### The remote does not function.

- ➡ The batteries in the remote are weak.
- ➡ There are obstacles between the remote and the player.
- ➡ The distance between the remote and the player is too far.
- ➡ The remote is not pointed at the remote sensor on the player.
- ➡ The command mode setting on the remote does not match the setting on the player (page 17).

### The disc does not play.

- ➡ The disc is turned over.
  Insert the disc with the playback side facing down on the disc tray.
- ➡ The disc is skewed.
- ➡ The player cannot play certain discs (page 6).
- ➡ The region code on the DVD does not match the player.
- ➡ Moisture has condensed inside the player (page 3).
- ➡ The player cannot play DVD-Rs, DVD-RWs, CD-Rs, or CD-RWs that are not finalized (page 7).

### The MP3 audio track cannot be played (page 43).

- ➡ The DATA CD is not recorded in the MP3 format that conforms to ISO9660 Level 1/Level 2 or Joliet.
- ➡ The MP3 audio track does not have the extension ".MP3."
- ➡ The data is not formatted in MP3 even though it has the extension ".MP3."
- ➡ The data is not MPEG1 Audio Layer 3 data.
- ➡ The player cannot play audio tracks in MP3PRO format.

### "Copyright lock" appears and the screen turns blue when playing a DVD-RW disc.

- ➡ Images taken from digital broadcasts, etc., may contain copy protection signals, such as complete copy protection signals, single copy signals, and restriction-free signals. When images that contain copy protection signals are played, a blue screen may appear instead of the images. It may take a while when looking for playable images.

### The title of the MP3 audio album or track is not correctly displayed.

- ➡ The player can only display numbers and alphabet. Other characters are displayed as "*."

### The disc does not start playing from the beginning.

- ➡ Program Play, Shuffle Play, Repeat Play, or A-B Repeat Play has been selected (page 45).
- ➡ Resume play has taken effect (page 38).

### The player starts playing the disc automatically.

- ➡ The disc features an auto playback function.
- ➡ "AUTO PLAY" in "CUSTOM SETUP" is set to "ON" (page 79).

### Playback stops automatically.

- ➡ While playing discs with an auto pause signal, the player stops playback at the auto pause signal.

### Some functions such as Stop, Search, Slow-motion Play, Repeat Play, Shuffle Play, or Program Play cannot be performed.

- ➡ Depending on the disc, you may not be able to do some of the operations above. See the operating manual that comes with the disc.

### The language for the sound track cannot be changed.

- ➡ Try using the DVD's menu instead of the scroll key on the remote (page 39).
- ➡ Multilingual tracks are not recorded on the DVD being played.
- ➡ The DVD prohibits the changing of the language for the sound track.

### The subtitle language cannot be changed or turned off.

- ➡ Try using the DVD's menu instead of the scroll key on the remote (page 39).
- ➡ Multilingual subtitles are not recorded on the DVD being played.
- ➡ The DVD prohibits the changing of the subtitles.

### The angles cannot be changed.

- ➡ Try using the DVD's menu instead of the scroll key on the remote (page 39).
- ➡ Multi-angles are not recorded on the DVD being played.
- ➡ The angle can only be changed when the "ANGLE" indicator lights up on the front panel display (page 10).
- ➡ The DVD prohibits changing of the angles.

### The player does not operate properly.

- ➡ When static electricity, etc., causes the player to operate abnormally, unplug the player.

### Nothing is displayed on the front panel display.

- ➡ "DIMMER" in "CUSTOM SETUP" is set to "OFF" or "AUTO OFF." Set "DIMMER" to any setting other than "OFF" or "AUTO OFF" (page 79).

### 5 numbers or letters are displayed on the screen and on the front panel display.

- ➡ The self-diagnosis function was activated. (See the table on page 87.)

### The disc tray does not open and "LOCKED" appears on the front panel display.

- ➡ Child Lock is set (page 36).

### The disc tray does not open and "TRAY LOCKED" appears on the front panel display.

- ➡ Contact your Sony dealer or local authorized Sony service facility.

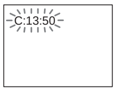
### "Data error" appears on the TV screen when playing a DATA CD.

- ➡ The MP3 audio track you want to play is broken.
- ➡ The data is not MPEG1 Audio Layer 3 data.

# Self-diagnosis Function

## (When letters/numbers appear in the display)

When the self-diagnosis function is activated to prevent the player from malfunctioning, a five-character service number (e.g., C 13 50) with a combination of a letter and four digits appears on the screen and the front panel display. In this case, check the following table.



| First three characters of the service number | Cause and/or corrective action |
|---|---|
| C 13 | The disc is dirty.<br>➡Clean the disc with a soft cloth (page 8). |
| C 31 | The disc is not inserted correctly.<br>➡Re-insert the disc correctly. |
| E XX<br>(xx is a number) | To prevent a malfunction, the player has performed the self-diagnosis function.<br>➡Contact your nearest Sony dealer or local authorized Sony service facility and give the 5-character service number. Example: E 61 10 |

# Glossary

### Chapter (page 10)

Sections of a picture or a music feature that are smaller than titles. A title is composed of several chapters. Depending on the disc, no chapters may be recorded.

### Dolby Digital (page 29, 81)

Digital audio compression technology developed by Dolby Laboratories. This technology conforms to 5.1-channel surround sound. The rear channel is stereo and there is a discrete subwoofer channel in this format. Dolby Digital provides the same 5.1 discrete channels of high quality digital audio found in Dolby Digital cinema audio systems. Good channel separation is realized because all of the channel data are recorded discretely and little deterioration is realized because all channel data processing is digital.

### Dolby Surround (Pro Logic) (page 28)

Audio signal processing technology that Dolby Laboratories developed for surround sound. When the input signal contains a surround component, the Pro Logic process outputs the front, center, and rear signals. The rear channel is monaural.

### DTS (page 29, 82)

Digital audio compression technology that Digital Theater Systems, Inc. developed. This technology conforms to 5.1-channel surround sound. The rear channel is stereo and there is a discrete subwoofer channel in this format. DTS provides 5.1 discrete channels of high quality digital audio.
Good channel separation is realized because all of the channel data is recorded discretely and little deterioration is realized because all channel data processing is digital.

### DVD VIDEO (page 6)

A disc that contains up to 8 hours of moving pictures even though its diameter is the same as a CD.
The data capacity of a single-layer and single-sided DVD is 4.7 GB (Giga Byte), which is 7 times that of a CD. The data capacity of a double-layer and single-sided DVD is 8.5 GB, a single-layer and double-sided DVD is 9.4 GB, and double-layer and double-sided DVD is 17GB.
The picture data uses the MPEG 2 format, one of the worldwide standards of digital compression technology. The picture data is compressed to about 1/40 (average) of its original size. The DVD also uses a variable rate coding technology that changes the data to be allocated according to the status of the picture. Audio information is recorded in a multi-channel format, such as Dolby Digital, allowing you to enjoy a more real audio presence.
Furthermore, various advanced functions such as the multi-angle, multilingual, and Parental Control functions are provided with the DVD.

### DVD-RW (page 6)

A DVD-RW is a recordable and rewritable disc with the same size as the DVD VIDEO. The DVD-RW can be recorded in two different modes: VR mode and Video mode. VR (Video Recording) mode enables various programming and editing functions, some of which are limited in the case of Video mode. Video mode complies with DVD VIDEO format. A disc recorded in Video mode can be played on other DVD players, while a disc recorded in VR mode can only be played on DVD-RW compliant players. "DVD-RW" appearing in this manual, and the on-screen displays refer to DVD-RWs in VR mode.

### Film based software, Video based software (page 62)

DVDs can be classified as Film based or Video based software. Film based DVDs contain the same images (24 frames per second) that are shown at movie theaters. Video based DVDs, such as television dramas or sit-coms, displays images at 30 frames (or 60 fields) per second.

### Index (CD)/Video Index (VIDEO CD) (page 10)

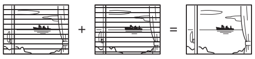
A number that divides a track into sections to easily locate the point you want on a CD or VIDEO CD. Depending on the disc, no index may be recorded.

### Interlace format (page 78)

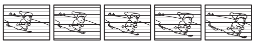
Interlace format shows every other line of an image as a single "field" and is the standard method for displaying images on television. The even number field shows the even numbered lines of an image, and the odd numbered field shows the odd numbered lines of an image.

### Progressive conversion method (page 62)

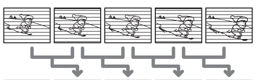
- Video based software conversion
Video shows an image by alternately displaying every other line of an image (field) at 30 frames (60 fields) per second (Interlace format).



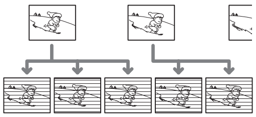
The Interlace format displays 30 frames (60 fields) per second by displaying every other line of the image, causing scanning lines to appear across the image. Furthermore, since only half of the image is shown at once, the amount of information contained in an image is limited.



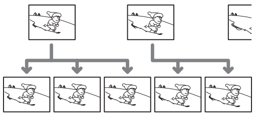
The Progressive format displays 60 entire frames per seconds. The player accomplishes this by converting each field into a frame by using either a field-based conversion method or a frame-based conversion method. The appropriate method is automatically selected by the player according to the movement of the images on the screen. If the movement on the screen is slow, the frame-based conversion method borrows adjacent field information to fill in the missing information. If the movement on the screen is rapid, the field-based conversion method creates the missing information by predicting the movement of the images on the screen from field to field. The end result is an image that is higher in quality when compared to the Interlace format.



- Film based software conversion
Film shows an image by displaying an entire image at 24 frames per second. When you watch a film on television, the television displays every other line of the frame as a field, thus reducing information level and the clarity of the film image.



This player solves this problem by increasing the speed at which the frames are displayed, consecutively showing 3 identical frames followed by 2 identical frames in the time that it normally takes to show 2 consecutive frames. The end result is that the 24 frames per second are increased to 60 frames per second, which is the speed at which Progressive video signals are shown.



This not only allows film to be shown in a frame based format, it also increases the clarity and sharpness which is unique to Progressive format images.

➜continued

### Progressive format (page 78)

Compared to the Interlace format that alternately shows every other line of an image (field) to create one frame, the Progressive format shows the entire image at once as a single frame. This means that while the Interlace format can show 30 frames (60 fields) in one second, the Progressive format can show 60 frames in one second. The overall picture quality increases and still images, text, and horizontal lines appear sharper.

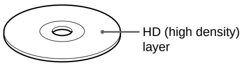
### Scene (page 10)

On a VIDEO CD with PBC (playback control) functions, the menu screens, moving pictures and still pictures are divided into sections called "scenes."

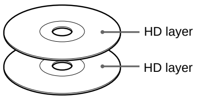
### Super Audio CD (page 6)

A Super Audio CD disc can reproduce sounds that are extremely faithful to the original sound by use of DSD (Direct Stream Digital) technology. This technology utilizes a sampling frequency of 2.8224 MHz, which is 64 times that of a conventional CD, and 1-bit quantization that enables the disc to hold 4 times the amount of information that a standard PCM format CD can hold. Super Audio CDs are divided into the following types.

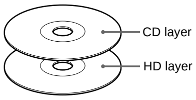
- Super Audio CD (single layer disc)
This disc consists of a single HD layer*.
*High density signal layer for the Super Audio CD



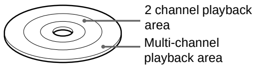
- Super Audio CD (dual layer disc)
This disc consists of dual HD layers and is capable of extended play over long periods. Also, as the dual layer disc consists of dual HD layers on one side only, you do not have to turn the disc over during playback.



- Super Audio CD + CD (Hybrid disc)
This disc consists of an HD layer and a CD layer. Also, as the dual layers are on one side only, you do not have to turn the disc over during playback. You can play the CD layer using a conventional CD player.



- 2 channel + Multi-channel Super Audio CD
This disc consists of the 2 channel playback area and the multi-channel playback area.



### Title (page 10)

The longest section of a picture or music feature on a DVD, movie, etc., in video software, or the entire album in audio software.

### Track (page 10)

Sections of a picture or a music feature on a CD or VIDEO CD (the length of a song).

## Language Code List

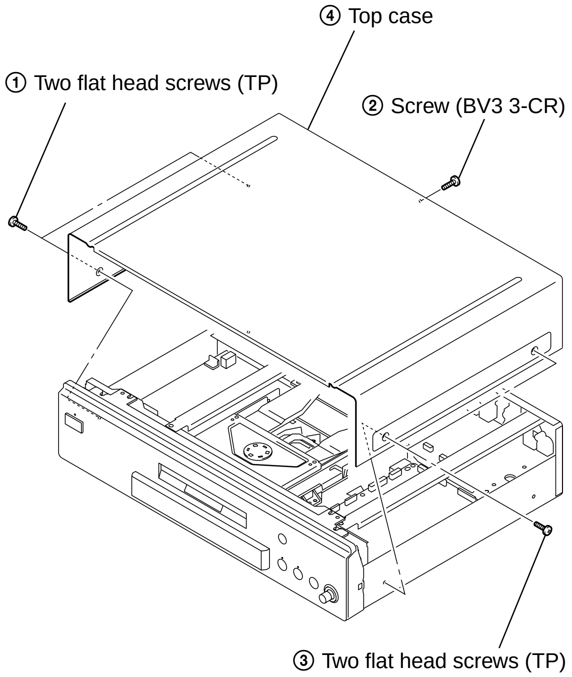
For details, see pages 57, 61, 76.
The language spellings conform to the ISO 639: 1988 (E/F) standard.

| Code | Language |
|---|---|
| 1027 | Afar |
| 1028 | Abkhazian |
| 1032 | Afrikaans |
| 1039 | Amharic |
| 1044 | Arabic |
| 1045 | Assamese |
| 1051 | Aymara |
| 1052 | Azerbaijani |
| 1053 | Bashkir |
| 1057 | Byelorussian |
| 1059 | Bulgarian |
| 1060 | Bihari |
| 1061 | Bislama |
| 1066 | Bengali; Bangla |
| 1067 | Tibetan |
| 1070 | Breton |
| 1079 | Catalan |
| 1093 | Corsican |
| 1097 | Czech |
| 1103 | Welsh |
| 1105 | Danish |
| 1109 | German |
| 1130 | Bhutani |
| 1142 | Greek |
| 1144 | English |
| 1145 | Esperanto |
| 1149 | Spanish |
| 1150 | Estonian |
| 1151 | Basque |
| 1157 | Persian |
| 1165 | Finnish |
| 1166 | Fiji |
| 1171 | Faroese |
| 1174 | French |
| 1181 | Frisian |
| 1183 | Irish |
| 1186 | Scots Gaelic |
| 1194 | Galician |
| 1196 | Guarani |
| 1203 | Gujarati |
| 1209 | Hausa |
| 1217 | Hindi |
| 1226 | Croatian |
| 1229 | Hungarian |
| 1233 | Armenian |
| 1235 | Interlingua |
| 1239 | Interlingue |
| 1245 | Inupiak |
| 1248 | Indonesian |
| 1253 | Icelandic |
| 1254 | Italian |
| 1257 | Hebrew |
| 1261 | Japanese |
| 1269 | Yiddish |
| 1283 | Javanese |
| 1287 | Georgian |
| 1297 | Kazakh |
| 1298 | Greenlandic |
| 1299 | Cambodian |
| 1300 | Kannada |
| 1301 | Korean |
| 1305 | Kashmiri |
| 1307 | Kurdish |
| 1311 | Kirghiz |
| 1313 | Latin |
| 1326 | Lingala |
| 1327 | Laothian |
| 1332 | Lithuanian |
| 1334 | Latvian; Lettish |
| 1345 | Malagasy |
| 1347 | Maori |
| 1349 | Macedonian |
| 1350 | Malayalam |
| 1352 | Mongolian |
| 1353 | Moldavian |
| 1356 | Marathi |
| 1357 | Malay |
| 1358 | Maltese |
| 1363 | Burmese |
| 1365 | Nauru |
| 1369 | Nepali |
| 1376 | Dutch |
| 1379 | Norwegian |
| 1393 | Occitan |
| 1403 | (Afan)Oromo |
| 1408 | Oriya |
| 1417 | Punjabi |
| 1428 | Polish |
| 1435 | Pashto; Pushto |
| 1436 | Portuguese |
| 1463 | Quechua |
| 1481 | Rhaeto-Romance |
| 1482 | Kirundi |
| 1483 | Romanian |
| 1489 | Russian |
| 1491 | Kinyarwanda |
| 1495 | Sanskrit |
| 1498 | Sindhi |
| 1501 | Sangho |
| 1502 | Serbo-Croatian |
| 1503 | Singhalese |
| 1505 | Slovak |
| 1506 | Slovenian |
| 1507 | Samoan |
| 1508 | Shona |
| 1509 | Somali |
| 1511 | Albanian |
| 1512 | Serbian |
| 1513 | Siswati |
| 1514 | Sesotho |
| 1515 | Sundanese |
| 1516 | Swedish |
| 1517 | Swahili |
| 1521 | Tamil |
| 1525 | Telugu |
| 1527 | Tajik |
| 1528 | Thai |
| 1529 | Tigrinya |
| 1531 | Turkmen |
| 1532 | Tagalog |
| 1534 | Setswana |
| 1535 | Tonga |
| 1538 | Turkish |
| 1539 | Tsonga |
| 1540 | Tatar |
| 1543 | Twi |
| 1557 | Ukrainian |
| 1564 | Urdu |
| 1572 | Uzbek |
| 1581 | Vietnamese |
| 1587 | Volapük |
| 1613 | Wolof |
| 1632 | Xhosa |
| 1665 | Yoruba |
| 1684 | Chinese |
| 1697 | Zulu |
| 1703 | Not specified |

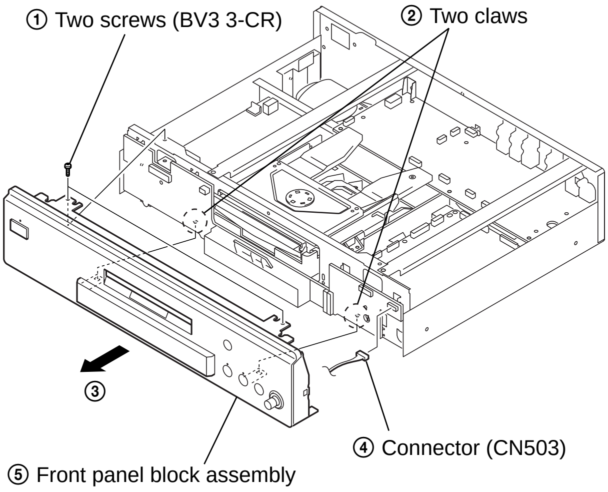
# SECTION 2
# DISASSEMBLY

**Note:** Follow the disassembly procedure in the numerical order given.

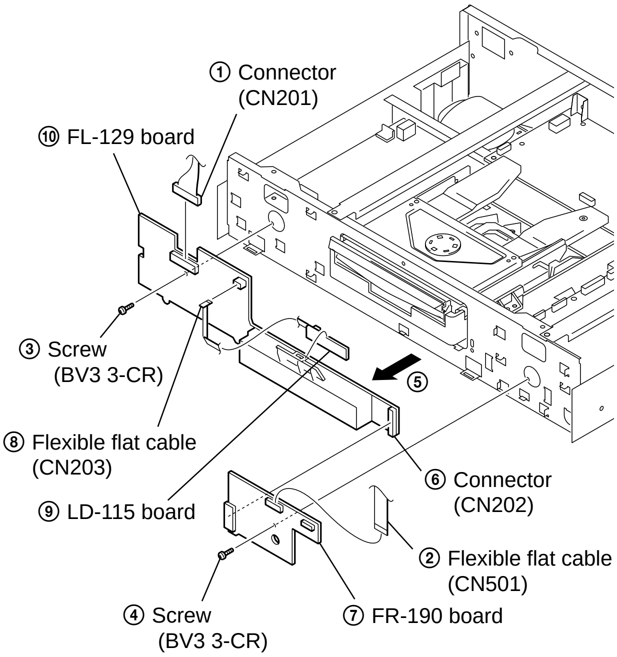
## 2-1. TOP CASE REMOVAL


④ Top case
① Two flat head screws (TP)
② Screw (BV3 3-CR)
③ Two flat head screws (TP)

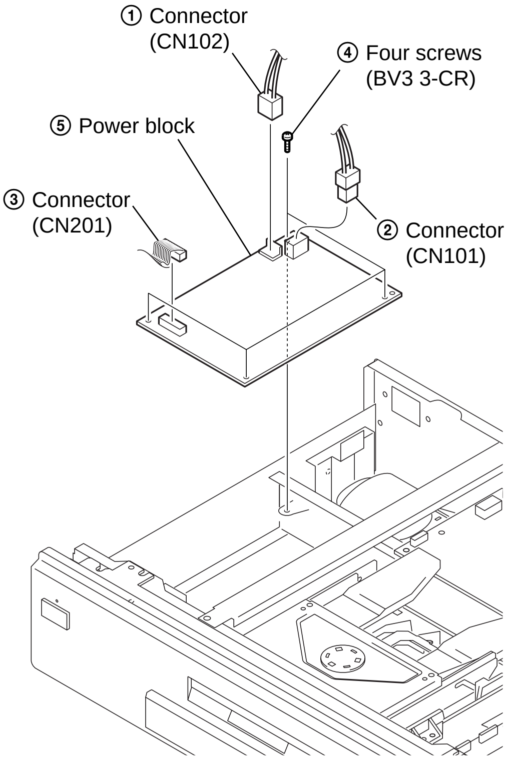
## 2-2. FRONT PANEL BLOCK ASSEMBLY REMOVAL


① Two screws (BV3 3-CR)
② Two claws
③
④ Connector (CN503)
⑤ Front panel block assembly

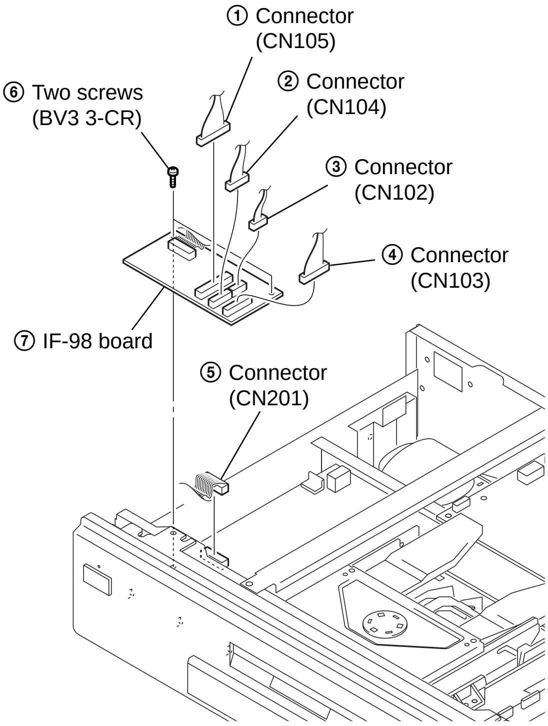
## 2-3. FL-129 BOARD REMOVAL


① Connector (CN201)
⑩ FL-129 board
③ Screw (BV3 3-CR)
⑤
⑧ Flexible flat cable (CN203)
⑥ Connector (CN202)
⑨ LD-115 board
② Flexible flat cable (CN501)
④ Screw (BV3 3-CR)
⑦ FR-190 board

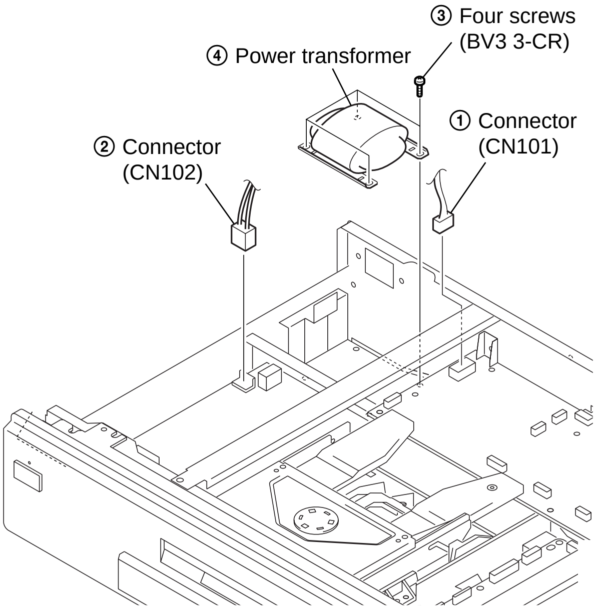
## 2-4. POWER BLOCK REMOVAL


① Connector (CN102)
④ Four screws (BV3 3-CR)
⑤ Power block
③ Connector (CN201)
② Connector (CN101)

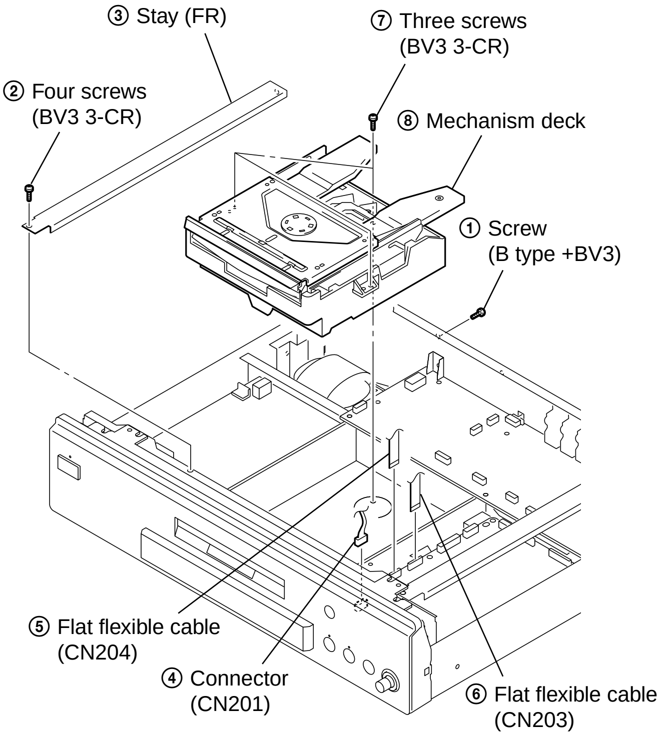
## 2-5. IF-98 BOARD REMOVAL


① Connector (CN105)
② Connector (CN104)
③ Connector (CN102)
④ Connector (CN103)
⑤ Connector (CN201)
⑥ Two screws (BV3 3-CR)
⑦ IF-98 board

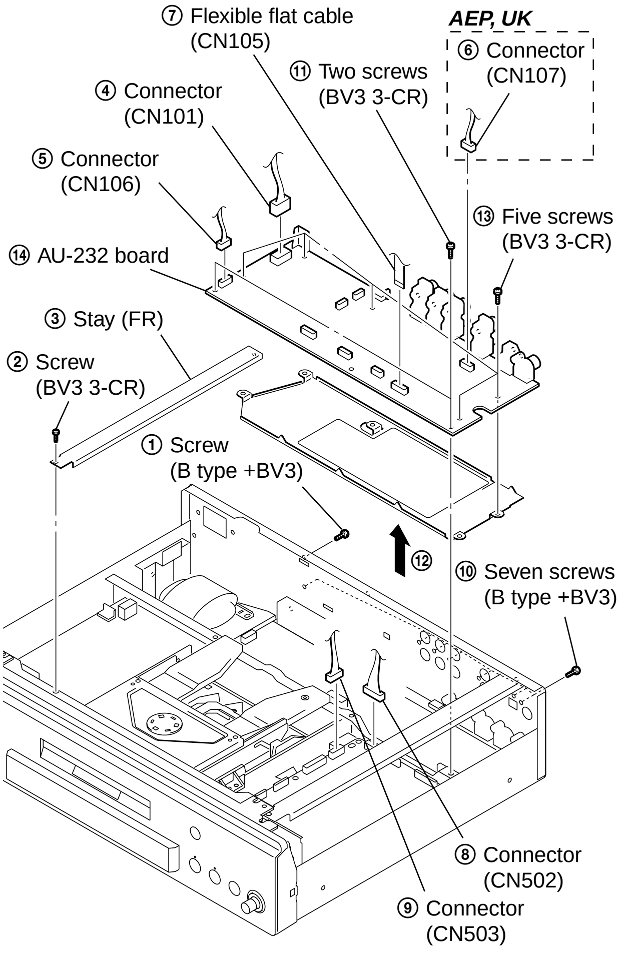
## 2-6. POWER TRANSFORMER REMOVAL


① Connector (CN101)
② Connector (CN102)
③ Four screws (BV3 3-CR)
④ Power transformer

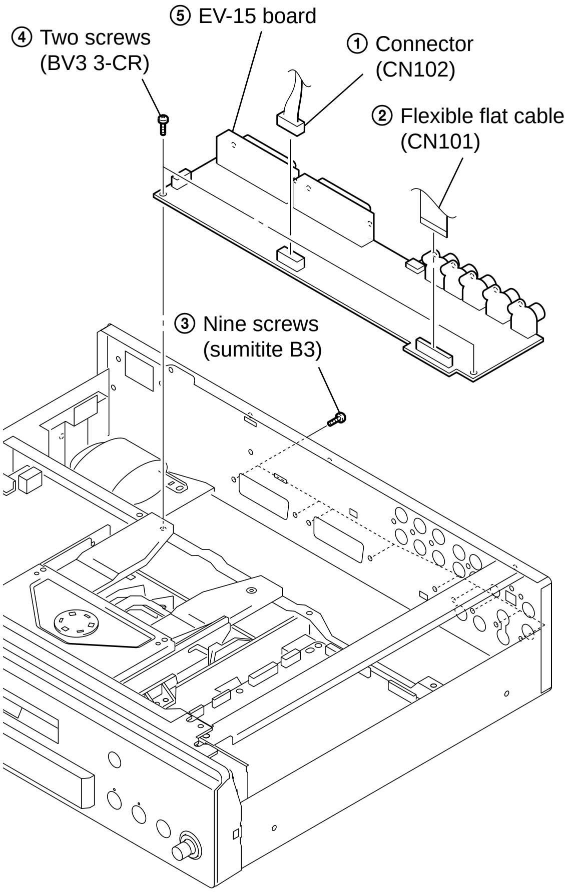
## 2-7. MECHANISM DECK REMOVAL


① Screw (B type +BV3)
② Four screws (BV3 3-CR)
③ Stay (FR)
④ Connector (CN201)
⑤ Flat flexible cable (CN204)
⑥ Flat flexible cable (CN203)
⑦ Three screws (BV3 3-CR)
⑧ Mechanism deck

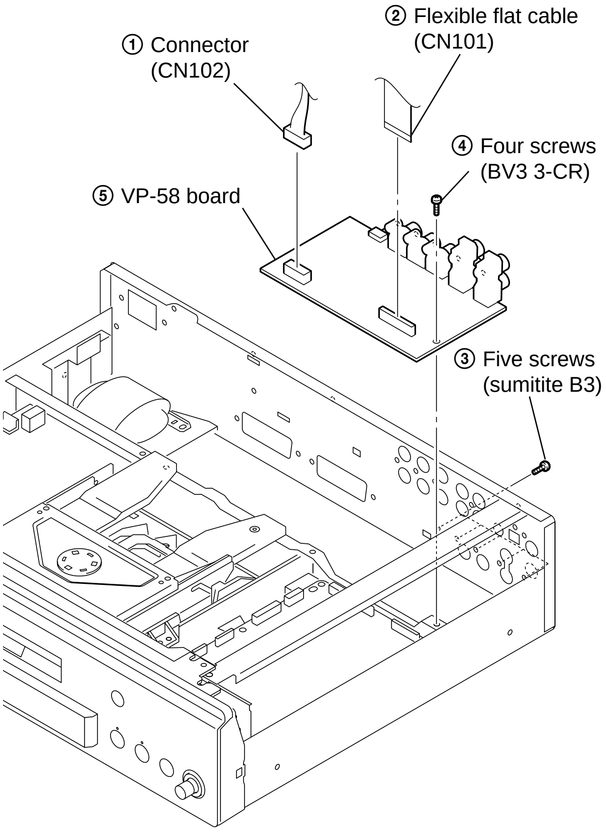
## 2-8. AU-232 BOARD REMOVAL


AEP, UK
① Screw (B type +BV3)
② Screw (BV3 3-CR)
③ Stay (FR)
④ Connector (CN101)
⑤ Connector (CN106)
⑥ Connector (CN107)
⑦ Flexible flat cable (CN105)
⑧ Connector (CN502)
⑨ Connector (CN503)
⑩ Seven screws (B type +BV3)
⑪ Two screws (BV3 3-CR)
⑫
⑬ Five screws (BV3 3-CR)
⑭ AU-232 board

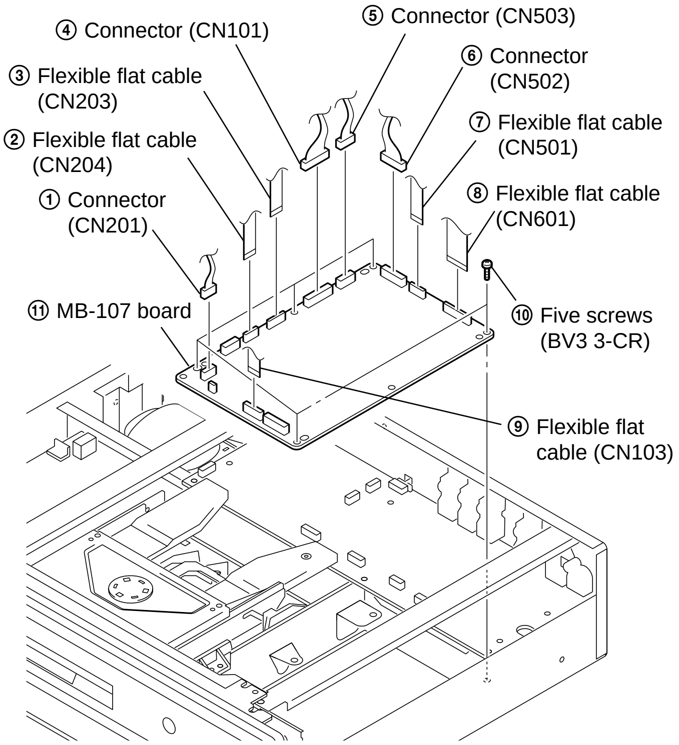
## 2-9. EV-15 BOARD REMOVAL (AEP, UK)


④ Two screws
(BV3 3-CR)
⑤ EV-15 board
① Connector
(CN102)
② Flexible flat cable
(CN101)
③ Nine screws
(sumitite B3)

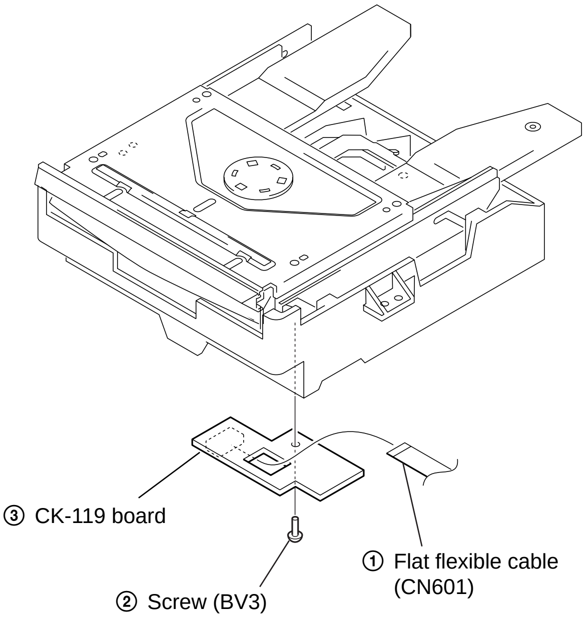
## 2-10. VP-58 BOARD REMOVAL (US, CND, KR)


① Connector
(CN102)
② Flexible flat cable
(CN101)
④ Four screws
(BV3 3-CR)
⑤ VP-58 board
③ Five screws
(sumitite B3)

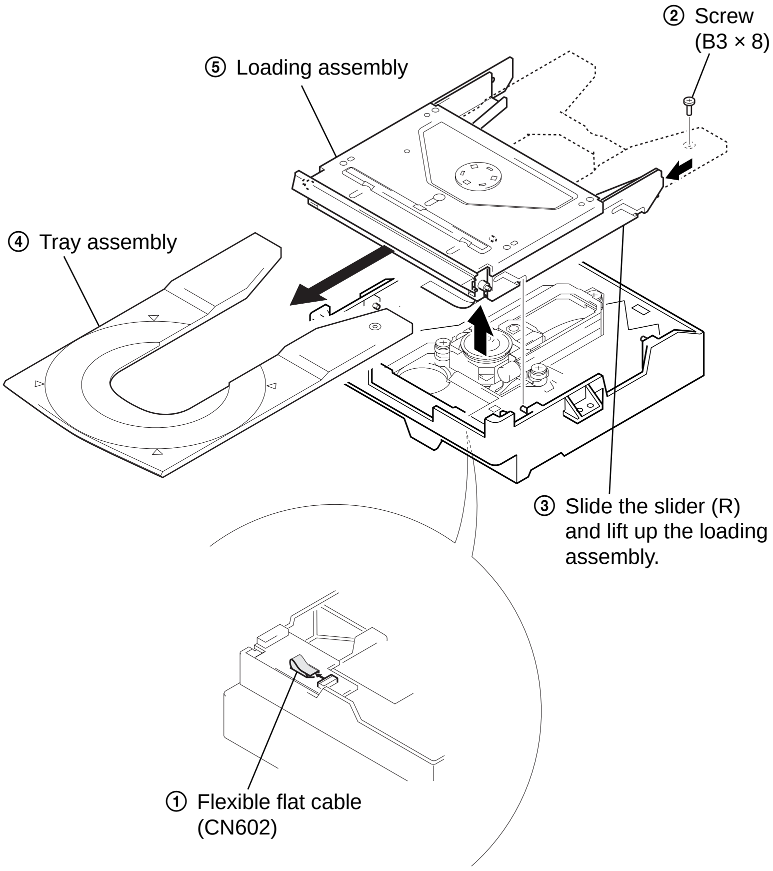
## 2-11. MB-107 BOARD REMOVAL


④ Connector (CN101)
⑤ Connector (CN503)
⑥ Connector
(CN502)
③ Flexible flat cable
(CN203)
⑦ Flexible flat cable
(CN501)
② Flexible flat cable
(CN204)
⑧ Flexible flat cable
(CN601)
① Connector
(CN201)
⑪ MB-107 board
⑩ Five screws
(BV3 3-CR)
⑨ Flexible flat
cable (CN103)

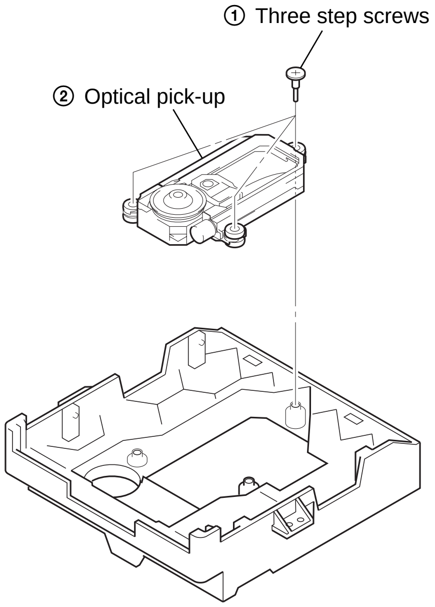
## 2-12. CK-119 BOARD REMOVAL


③ CK-119 board
① Flat flexible cable
(CN601)
② Screw (BV3)

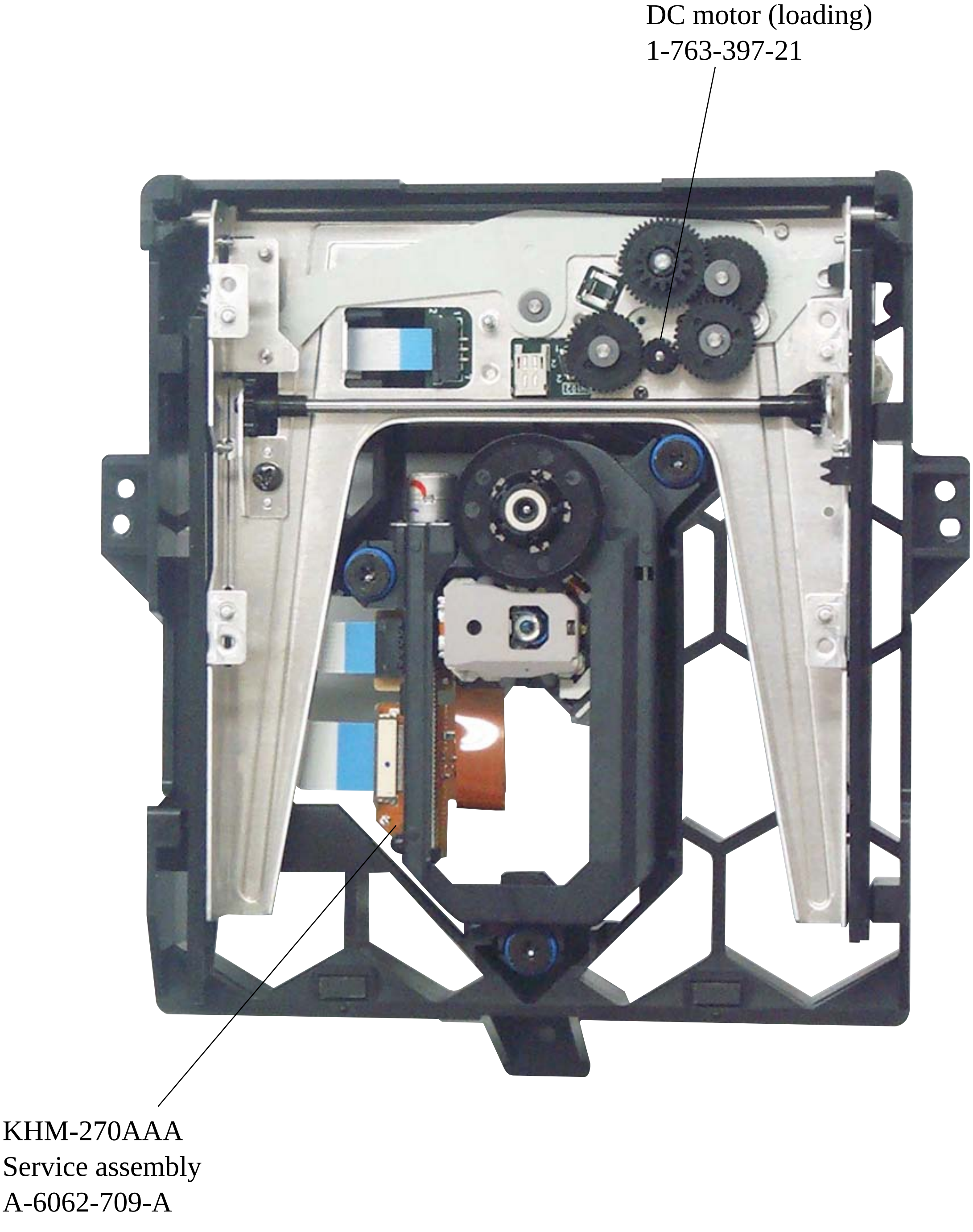
## 2-13. LOADING ASSEMBLY REMOVAL


② Screw
(B3 × 8)
⑤ Loading assembly
④ Tray assembly
③ Slide the slider (R)
and lift up the loading
assembly.
① Flexible flat cable
(CN602)

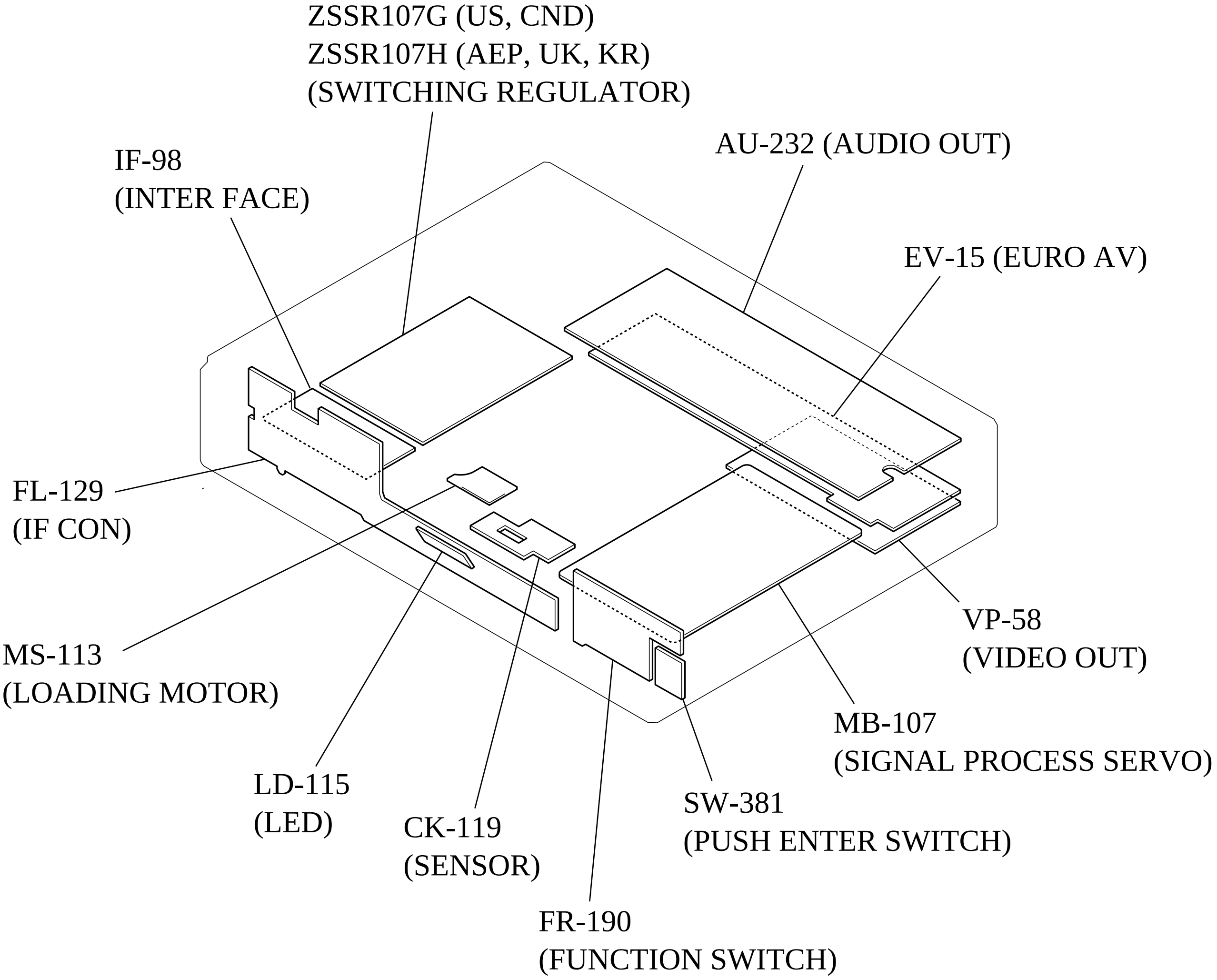
## 2-14. OPTICAL PICK-UP REMOVAL


① Three step screws
② Optical pick-up

## 2-15. INTERNAL VIEW

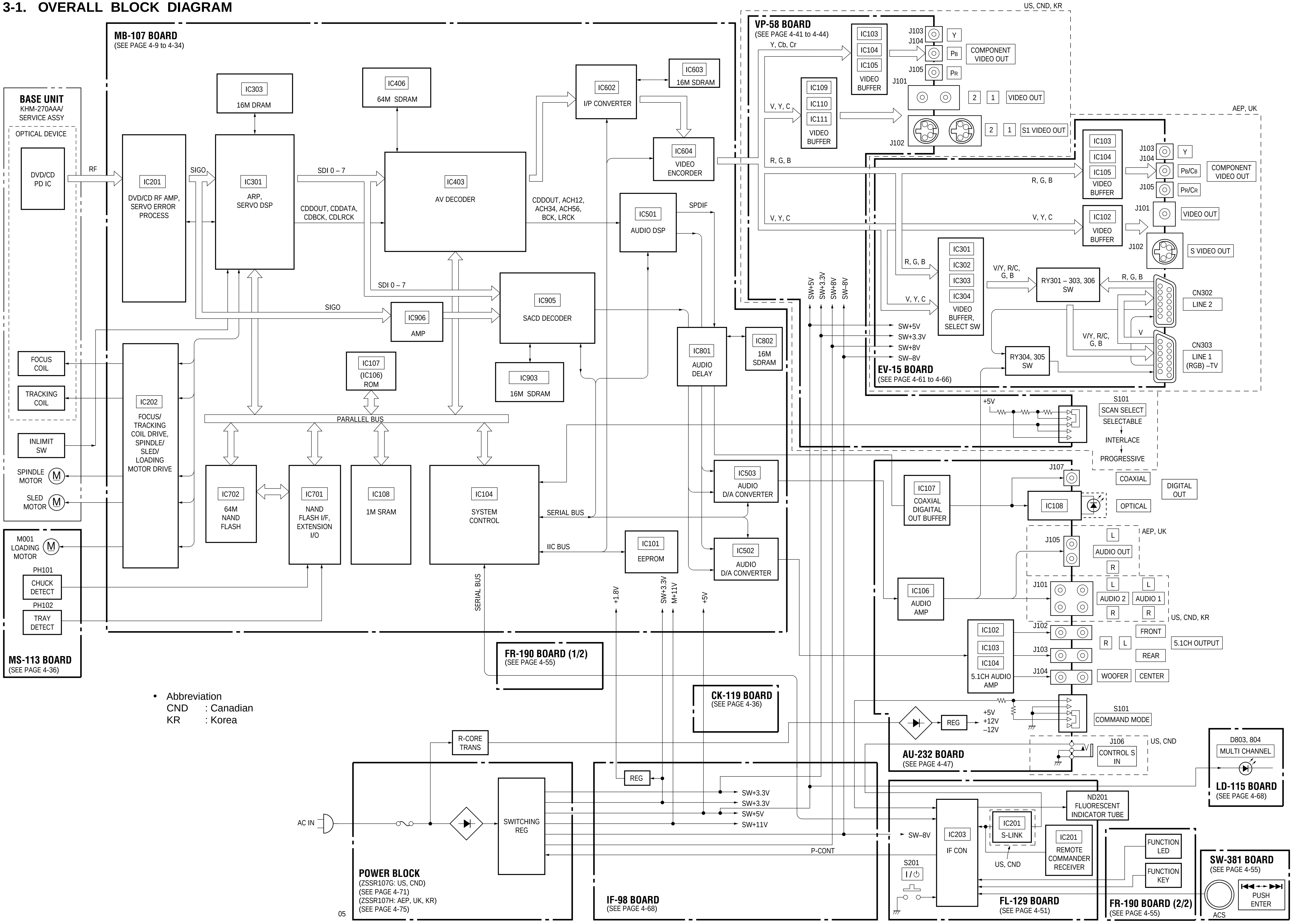

DC motor (loading)
1-763-397-21
KHM-270AAA
Service assembly
A-6062-709-A

## 2-16. CIRCUIT BOARDS LOCATION


ZSSR107G (US, CND)
ZSSR107H (AEP, UK, KR)
(SWITCHING REGULATOR)
IF-98
(INTER FACE)
AU-232 (AUDIO OUT)
EV-15 (EURO AV)
FL-129
(IF CON)
VP-58
(VIDEO OUT)
MS-113
(LOADING MOTOR)
MB-107
(SIGNAL PROCESS SERVO)
LD-115
(LED)
SW-381
(PUSH ENTER SWITCH)
CK-119
(SENSOR)
FR-190
(FUNCTION SWITCH)

# SECTION 3
# BLOCK DIAGRAMS

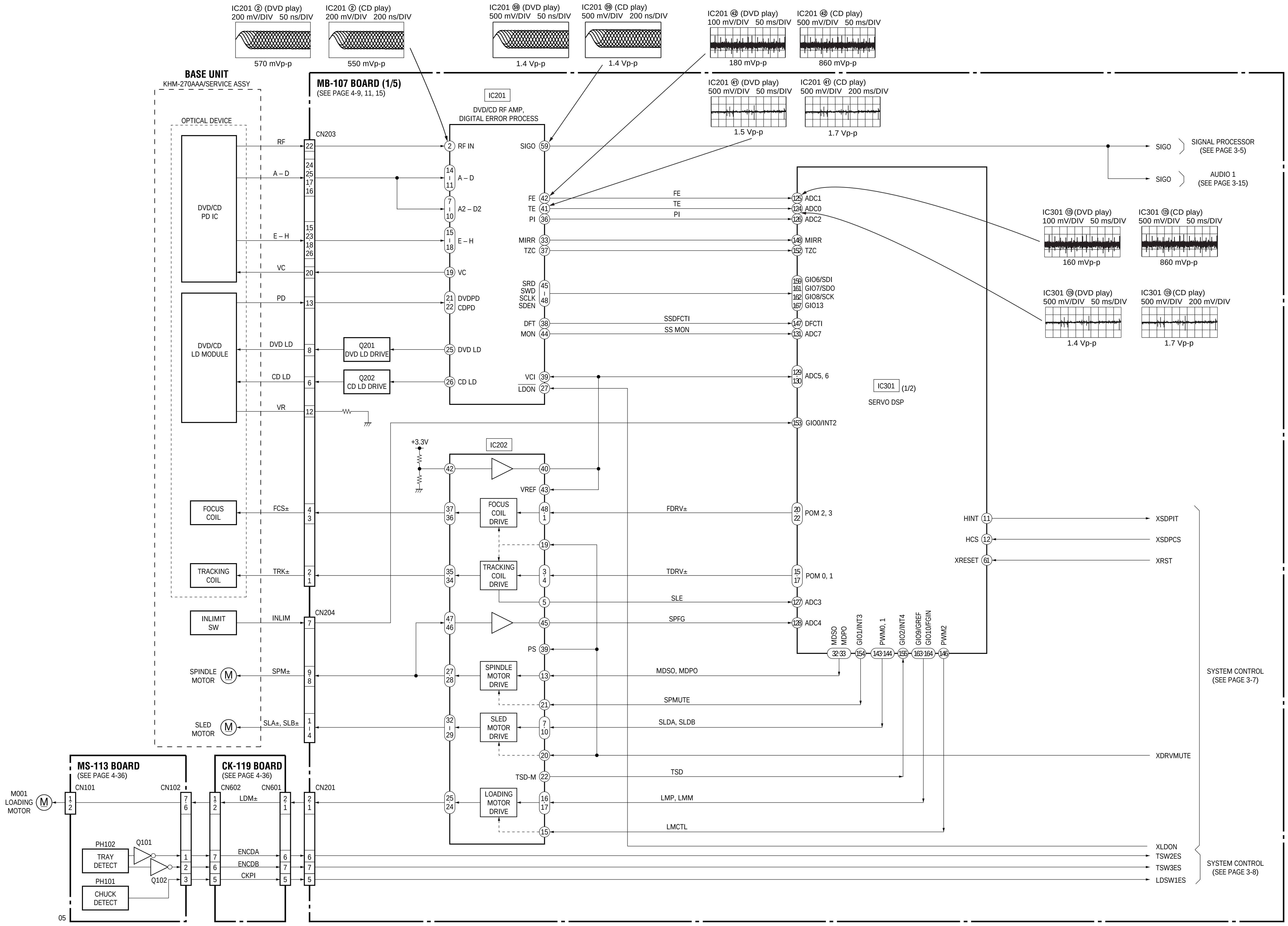
## 3-1. OVERALL BLOCK DIAGRAM



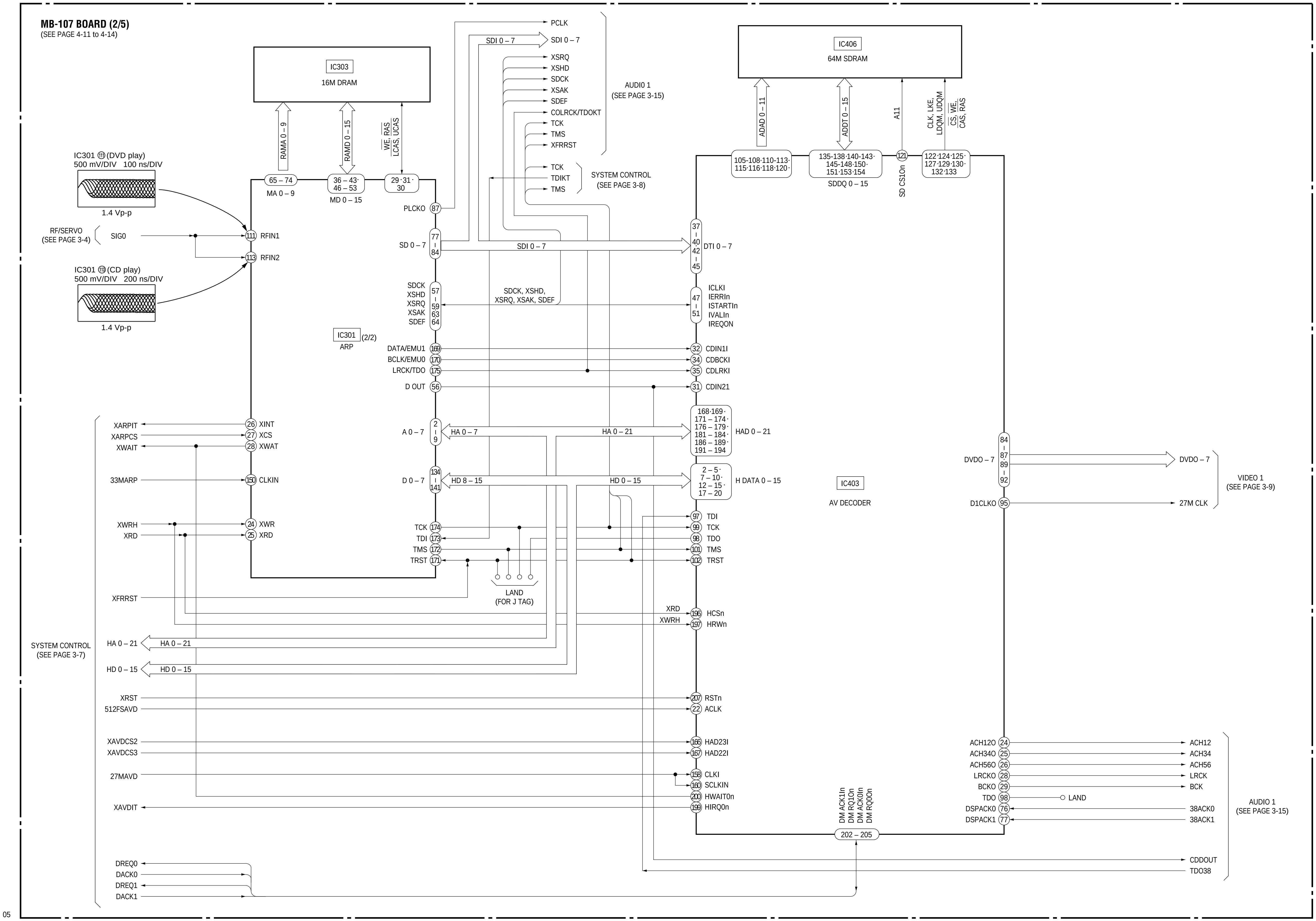
MB-107 BOARD
(SEE PAGE 4-9 to 4-34)
BASE UNIT
KHM-270AAA/
SERVICE ASSY
OPTICAL DEVICE
DVD/CD PD IC
RF
FOCUS COIL
TRACKING COIL
INLIMIT SW
SPINDLE MOTOR
SLED MOTOR
M
IC201
DVD/CD RF AMP, SERVO ERROR PROCESS
SIGO
IC303
16M DRAM
IC301
ARP, SERVO DSP
SDI 0 – 7
CDDOUT, CDDATA, CDBCK, CDLRCK
IC406
64M SDRAM
IC403
AV DECODER
CDDOUT, ACH12, ACH34, ACH56, BCK, LRCK
IC602
I/P CONVERTER
IC603
16M SDRAM
IC604
VIDEO ENCORDER
IC501
AUDIO DSP
SPDIF
SDI 0 – 7
SIGO
IC906
AMP
IC905
SACD DECODER
IC903
16M SDRAM
IC801
AUDIO DELAY
IC802
16M SDRAM
IC202
FOCUS/ TRACKING COIL DRIVE, SPINDLE/ SLED/ LOADING MOTOR DRIVE
IC107
(IC106)
ROM
PARALLEL BUS
IC702
64M NAND FLASH
IC701
NAND FLASH I/F, EXTENSION I/O
IC108
1M SRAM
IC104
SYSTEM CONTROL
SERIAL BUS
IIC BUS
IC101
EEPROM
IC503
AUDIO D/A CONVERTER
IC502
AUDIO D/A CONVERTER
SERIAL BUS
+1.8V
SW+3.3V
M+11V
+5V
MS-113 BOARD
(SEE PAGE 4-36)
M001
LOADING MOTOR
PH101
CHUCK DETECT
PH102
TRAY DETECT
FR-190 BOARD (1/2)
(SEE PAGE 4-55)
CK-119 BOARD
(SEE PAGE 4-36)
VP-58 BOARD
(SEE PAGE 4-41 to 4-44)
US, CND, KR
Y, Cb, Cr
IC103
IC104
IC105
VIDEO BUFFER
J103
J104
J105
Y
PB
PR
COMPONENT VIDEO OUT
J101
2
1
VIDEO OUT
V, Y, C
IC109
IC110
IC111
VIDEO BUFFER
J102
S1 VIDEO OUT
R, G, B
AEP, UK
IC103
IC104
IC105
VIDEO BUFFER
J103
J104
J105
Y
PB/CB
PR/CR
COMPONENT VIDEO OUT
R, G, B
V, Y, C
IC102
VIDEO BUFFER
J101
VIDEO OUT
J102
S VIDEO OUT
SW+5V
SW+3.3V
SW+8V
SW–8V
R, G, B
V, Y, C
IC301
IC302
IC303
IC304
VIDEO BUFFER, SELECT SW
V/Y, R/C, G, B
RY301 – 303, 306 SW
R, G, B
CN302
LINE 2
V
V/Y, R/C, G, B
RY304, 305 SW
CN303
LINE 1 (RGB) –TV
SW+5V
SW+3.3V
SW+8V
SW–8V
EV-15 BOARD
(SEE PAGE 4-61 to 4-66)
+5V
S101
SCAN SELECT
SELECTABLE
INTERLACE
PROGRESSIVE
J107
IC107
COAXIAL DIGAITAL OUT BUFFER
IC108
COAXIAL
OPTICAL
DIGITAL OUT
AEP, UK
J105
L
AUDIO OUT
R
J101
L
L
AUDIO 2
AUDIO 1
R
R
US, CND, KR
IC106
AUDIO AMP
IC102
IC103
IC104
5.1CH AUDIO AMP
J102
J103
J104
FRONT
R
L
5.1CH OUTPUT
REAR
WOOFER
CENTER
+5V
+12V
–12V
REG
S101
COMMAND MODE
J106
US, CND
CONTROL S IN
AU-232 BOARD
(SEE PAGE 4-47)
D803, 804
MULTI CHANNEL
LD-115 BOARD
(SEE PAGE 4-68)
R-CORE TRANS
AC IN
SWITCHING REG
POWER BLOCK
(ZSSR107G: US, CND)
(SEE PAGE 4-71)
(ZSSR107H: AEP, UK, KR)
(SEE PAGE 4-75)
05
REG
SW+3.3V
SW+3.3V
SW+5V
SW+11V
P-CONT
IF-98 BOARD
(SEE PAGE 4-68)
SW–8V
IC203
IF CON
S201
I / ⏻
IC201
S-LINK
US, CND
ND201
FLUORESCENT INDICATOR TUBE
IC201
REMOTE COMMANDER RECEIVER
FL-129 BOARD
(SEE PAGE 4-51)
FUNCTION LED
FUNCTION KEY
FR-190 BOARD (2/2)
(SEE PAGE 4-55)
SW-381 BOARD
(SEE PAGE 4-55)
ACS
PUSH ENTER

- Abbreviation
  CND : Canadian
  KR : Korea

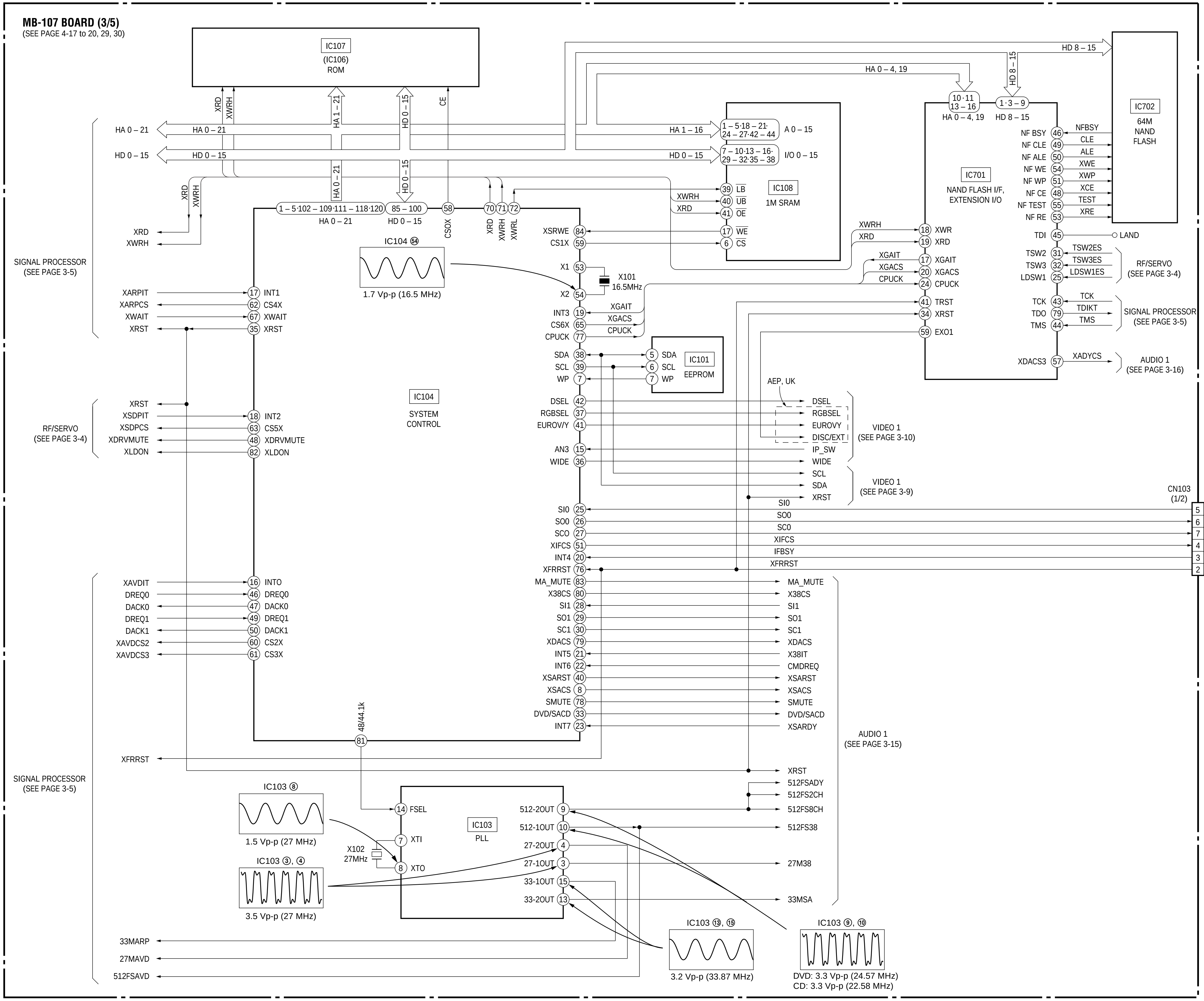
## 3-2. RF/SERVO BLOCK DIAGRAM


IC201 ② (DVD play)
200 mV/DIV 50 ns/DIV
570 mVp-p
IC201 ② (CD play)
200 mV/DIV 200 ns/DIV
550 mVp-p
IC201 ㊾ (DVD play)
500 mV/DIV 50 ns/DIV
1.4 Vp-p
IC201 ㊾ (CD play)
500 mV/DIV 200 ns/DIV
1.4 Vp-p
IC201 ㊷ (DVD play)
100 mV/DIV 50 ms/DIV
180 mVp-p
IC201 ㊷ (CD play)
500 mV/DIV 50 ms/DIV
860 mVp-p
IC201 ㊶ (DVD play)
500 mV/DIV 50 ms/DIV
1.5 Vp-p
IC201 ㊶ (CD play)
500 mV/DIV 200 ms/DIV
1.7 Vp-p
IC301 (125) (DVD play)
100 mV/DIV 50 ms/DIV
160 mVp-p
IC301 (125) (CD play)
500 mV/DIV 50 ms/DIV
860 mVp-p
IC301 (124) (DVD play)
500 mV/DIV 50 ms/DIV
1.4 Vp-p
IC301 (124) (CD play)
500 mV/DIV 200 mV/DIV
1.7 Vp-p
BASE UNIT
KHM-270AAA/SERVICE ASSY
OPTICAL DEVICE
DVD/CD PD IC
DVD/CD LD MODULE
FOCUS COIL
TRACKING COIL
INLIMIT SW
SPINDLE MOTOR
SLED MOTOR
M
RF
A – D
E – H
VC
PD
DVD LD
CD LD
VR
FCS±
TRK±
INLIM
SPM±
SLA±, SLB±
MB-107 BOARD (1/5)
(SEE PAGE 4-9, 11, 15)
CN203
CN204
CN201
IC201
DVD/CD RF AMP, DIGITAL ERROR PROCESS
RF IN
A – D
A2 – D2
E – H
VC
DVDPD
CDPD
DVD LD
CD LD
SIGO
FE
TE
PI
MIRR
TZC
SRD
SWD
SCLK
SDEN
DFT
MON
VCI
LDON
Q201
DVD LD DRIVE
Q202
CD LD DRIVE
+3.3V
IC202
VREF
FOCUS COIL DRIVE
TRACKING COIL DRIVE
SPINDLE MOTOR DRIVE
SLED MOTOR DRIVE
LOADING MOTOR DRIVE
PS
TSD-M
FDRV±
TDRV±
SLE
SPFG
MDSO, MDPO
SPMUTE
SLDA, SLDB
TSD
LMP, LMM
LMCTL
SSDFCTI
SS MON
IC301 (1/2)
SERVO DSP
ADC1
ADC0
ADC2
MIRR
TZC
GIO6/SDI
GIO7/SDO
GIO8/SCK
GIO13
DFCTI
ADC7
ADC5, 6
GIO0/INT2
POM 2, 3
POM 0, 1
ADC3
ADC4
MDSO
MDPO
GIO1/INT3
PWM0, 1
GIO2/INT4
GIO9/GREF
GIO10/FGIN
PWM2
HINT
HCS
XRESET
SIGO
SIGNAL PROCESSOR (SEE PAGE 3-5)
SIGO
AUDIO 1 (SEE PAGE 3-15)
XSDPIT
XSDPCS
XRST
XDRVMUTE
SYSTEM CONTROL (SEE PAGE 3-7)
XLDON
TSW2ES
TSW3ES
LDSW1ES
SYSTEM CONTROL (SEE PAGE 3-8)
MS-113 BOARD
(SEE PAGE 4-36)
CN101
CN102
M001 LOADING MOTOR
PH102
TRAY DETECT
Q101
Q102
PH101
CHUCK DETECT
CK-119 BOARD
(SEE PAGE 4-36)
CN602
CN601
LDM±
ENCDA
ENCDB
CKPI
05

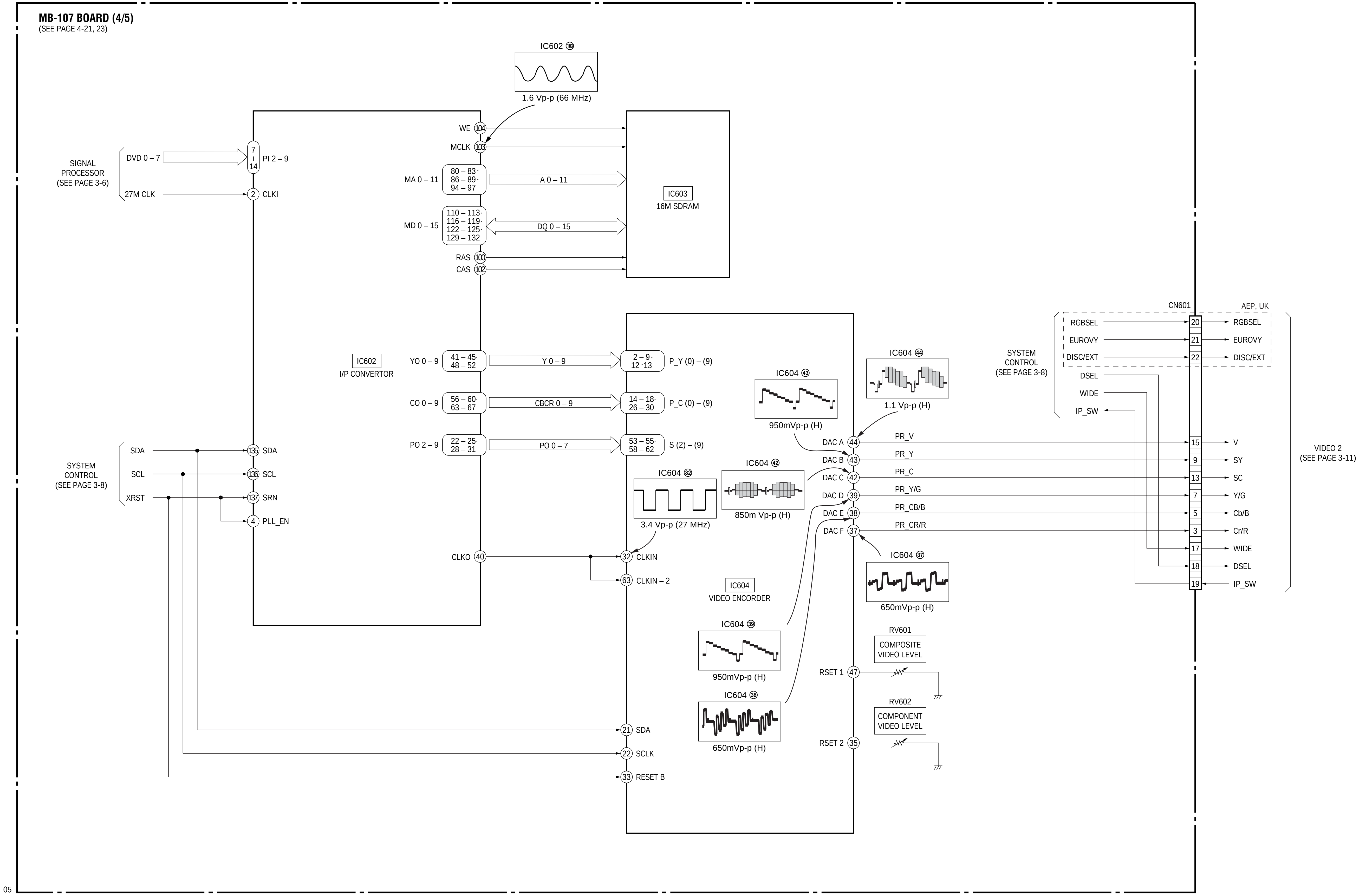
## 3-3. SIGNAL PROCESSOR BLOCK DIAGRAM


MB-107 BOARD (2/5)
(SEE PAGE 4-11 to 4-14)
IC303
16M DRAM
RAMA 0 – 9
RAMD 0 – 15
WE, RAS
LCAS, UCAS
65 – 74
MA 0 – 9
36 – 43·
46 – 53
MD 0 – 15
29·31·
30
IC301 ⑪ (DVD play)
500 mV/DIV 100 ns/DIV
1.4 Vp-p
IC301 ⑪ (CD play)
500 mV/DIV 200 ns/DIV
1.4 Vp-p
RF/SERVO
(SEE PAGE 3-4)
SIG0
111 RFIN1
113 RFIN2
PCLK
SDI 0 – 7
SDI 0 – 7
XSRQ
XSHD
SDCK
XSAK
SDEF
COLRCK/TDOKT
TCK
TMS
XFRRST
AUDIO 1
(SEE PAGE 3-15)
TCK
TDIKT
TMS
SYSTEM CONTROL
(SEE PAGE 3-8)
PLCKO 87
SD 0 – 7 77 – 84
SDI 0 – 7
SDCK
XSHD
XSRQ
XSAK
SDEF
57 – 59 63 64
SDCK, XSHD,
XSRQ, XSAK, SDEF
IC301 (2/2)
ARP
DATA/EMU1 169
BCLK/EMU0 170
LRCK/TDO 175
D OUT 56
A 0 – 7 2 – 9
HA 0 – 7
HA 0 – 21
D 0 – 7 134 – 141
HD 8 – 15
HD 0 – 15
TCK 174
TDI 173
TMS 172
TRST 171
LAND
(FOR J TAG)
XARPIT 26 XINT
XARPCS 27 XCS
XWAIT 28 XWAT
33MARP 150 CLKIN
XWRH 24 XWR
XRD 25 XRD
XFRRST
SYSTEM CONTROL
(SEE PAGE 3-7)
HA 0 – 21
HA 0 – 21
HD 0 – 15
HD 0 – 15
XRST
512FSAVD
XAVDCS2
XAVDCS3
27MAVD
XAVDIT
DREQ0
DACK0
DREQ1
DACK1
IC406
64M SDRAM
ADAD 0 – 11
ADDT 0 – 15
A11
CLK, LKE,
LDQM, UDQM
CS, WE,
CAS, RAS
105·108·110·113·
115·116·118·120·
135·138·140·143·
145·148·150·
151·153·154
SDDQ 0 – 15
121
SD CS1On
122·124·125·
127·129·130·
132·133
37 – 40 42 – 45 DTI 0 – 7
47 – 51
ICLKI
IERRIn
ISTARTIn
IVALIn
IREQON
32 CDIN1I
34 CDBCKI
35 CDLRKI
31 CDIN21
168·169·
171 – 174·
176 – 179·
181 – 184·
186 – 189·
191 – 194
HAD 0 – 21
2 – 5·
7 – 10·
12 – 15·
17 – 20
H DATA 0 – 15
97 TDI
99 TCK
98 TDO
101 TMS
102 TRST
XRD 196 HCSn
XWRH 197 HRWn
207 RSTn
22 ACLK
166 HAD23I
167 HAD22I
158 CLKI
160 SCLKIN
200 HWAIT0n
199 HIRQ0n
DM ACK1In
DM RQ1On
DM ACK0In
DM RQ0On
202 – 205
IC403
AV DECODER
DVDO – 7 84 – 87 89 – 92
DVDO – 7
D1CLKO 95
27M CLK
VIDEO 1
(SEE PAGE 3-9)
ACH12O 24
ACH34O 25
ACH56O 26
LRCKO 28
BCKO 29
TDO 98
DSPACK0 76
DSPACK1 77
ACH12
ACH34
ACH56
LRCK
BCK
LAND
38ACK0
38ACK1
CDDOUT
TDO38
AUDIO 1
(SEE PAGE 3-15)
05

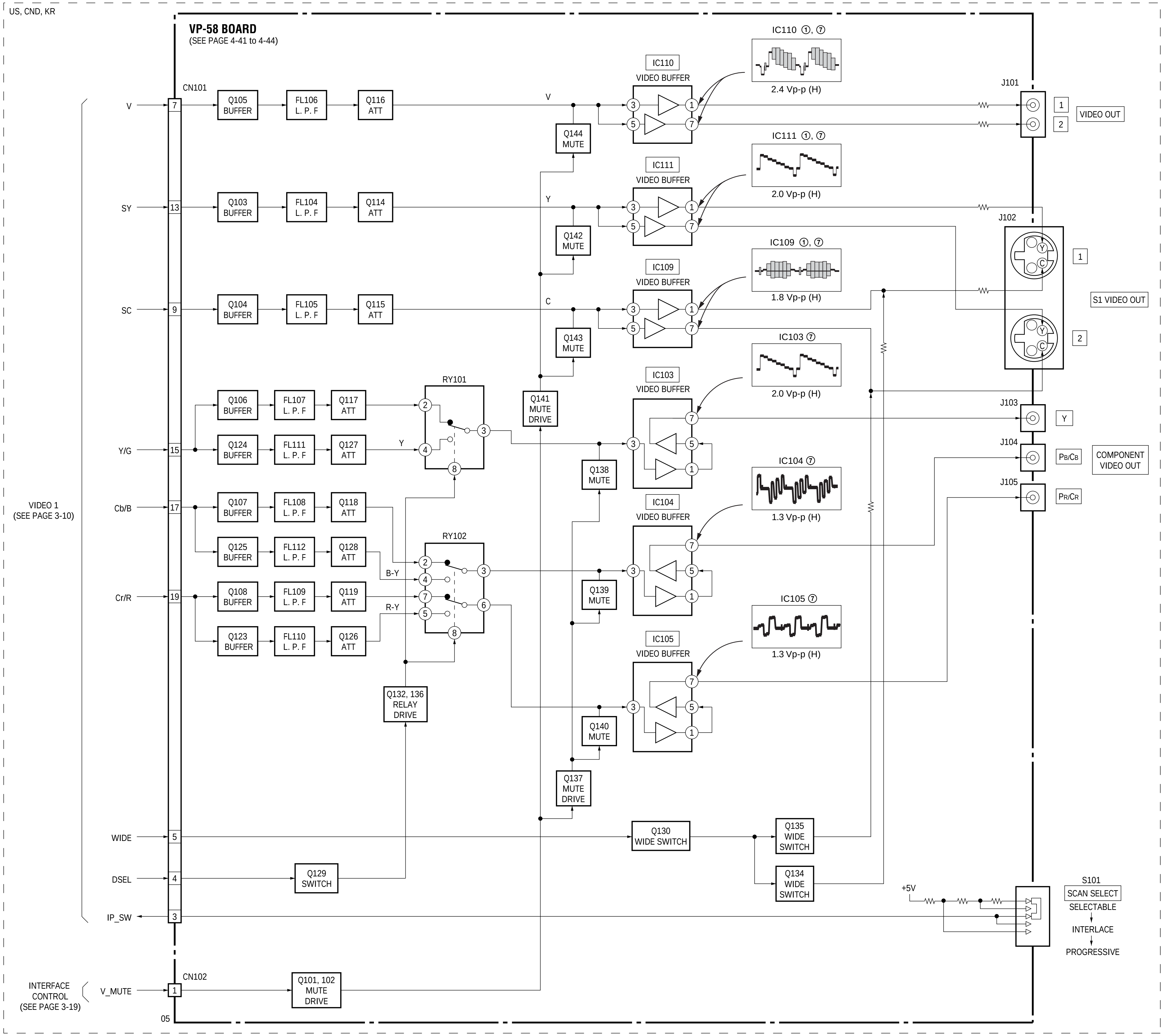
## 3-4. SYSTEM CONTROL BLOCK DIAGRAM


MB-107 BOARD (3/5)
(SEE PAGE 4-17 to 20, 29, 30)
IC107
(IC106)
ROM
XRD
XWRH
HA 1 – 21
HD 0 – 15
CE
HA 0 – 21
HD 0 – 15
HA 1 – 16
1 – 5·18 – 21· 24 – 27·42 – 44
A 0 – 15
7 – 10·13 – 16· 29 – 32·35 – 38
I/O 0 – 15
IC108
1M SRAM
39 LB
40 UB
41 OE
17 WE
6 CS
HD 8 – 15
HA 0 – 4, 19
10·11 13 – 16
1·3 – 9
IC701
NAND FLASH I/F, EXTENSION I/O
IC702
64M NAND FLASH
NF BSY 46 NFBSY
NF CLE 49 CLE
NF ALE 50 ALE
NF WE 54 XWE
NF WP 51 XWP
NF CE 48 XCE
NF TEST 55 TEST
NF RE 53 XRE
TDI 45 LAND
TSW2 31 TSW2ES
TSW3 32 TSW3ES
LDSW1 25 LDSW1ES
RF/SERVO (SEE PAGE 3-4)
TCK 43 TCK
TDO 79 TDIKT
TMS 44 TMS
SIGNAL PROCESSOR (SEE PAGE 3-5)
XDACS3 57 XADYCS
AUDIO 1 (SEE PAGE 3-16)
18 XWR
19 XRD
17 XGAIT
20 XGACS
24 CPUCK
41 TRST
34 XRST
59 EXO1
SIGNAL PROCESSOR (SEE PAGE 3-5)
XRD
XWRH
XARPIT 17 INT1
XARPCS 62 CS4X
XWAIT 67 XWAIT
XRST 35 XRST
1 – 5·102 – 109·111 – 118·120
85 – 100
58
CSOX
70 71 72
XRD XWRH XWRL
IC104 (54)
1.7 Vp-p (16.5 MHz)
XSRWE 84
CS1X 59
X1 53
X2 54
X101 16.5MHz
INT3 19 XGAIT
CS6X 65 XGACS
CPUCK 77 CPUCK
SDA 38
SCL 39
WP 7
IC101 EEPROM
5 SDA
6 SCL
7 WP
IC104
SYSTEM CONTROL
RF/SERVO (SEE PAGE 3-4)
XRST
XSDPIT 18 INT2
XSDPCS 63 CS5X
XDRVMUTE 48 XDRVMUTE
XLDON 82 XLDON
DSEL 42
RGBSEL 37
EUROV/Y 41
AN3 15
WIDE 36
AEP, UK
DSEL
RGBSEL
EUROVY
DISC/EXT
IP_SW
WIDE
VIDEO 1 (SEE PAGE 3-10)
SCL
SDA
XRST
VIDEO 1 (SEE PAGE 3-9)
SI0 25
SO0 26
SC0 27
XIFCS 51
INT4 20
XFRRST 76
CN103 (1/2)
5 SI0
6 SO0
7 SC0
4 XIFCS
3 IFBSY
2 XFRRST
INTERFACE CONTROL (SEE PAGE 3-19)
SIGNAL PROCESSOR (SEE PAGE 3-5)
XAVDIT 16 INTO
DREQ0 46 DREQ0
DACK0 47 DACK0
DREQ1 49 DREQ1
DACK1 50 DACK1
XAVDCS2 60 CS2X
XAVDCS3 61 CS3X
MA_MUTE 83 MA_MUTE
X38CS 80 X38CS
SI1 28 SI1
SO1 29 SO1
SC1 30 SC1
XDACS 79 XDACS
INT5 21 X38IT
INT6 22 CMDREQ
XSARST 40 XSARST
XSACS 8 XSACS
SMUTE 78 SMUTE
DVD/SACD 33 DVD/SACD
INT7 23 XSARDY
48/44.1k 81
XFRRST
XRST
512FSADY
512FS2CH
512FS8CH
512FS38
27M38
33MSA
AUDIO 1 (SEE PAGE 3-15)
IC103 (8)
1.5 Vp-p (27 MHz)
IC103 (3), (4)
3.5 Vp-p (27 MHz)
X102 27MHz
14 FSEL
7 XTI
8 XTO
IC103
PLL
512-2OUT 9
512-1OUT 10
27-2OUT 4
27-1OUT 3
33-1OUT 15
33-2OUT 13
IC103 (13), (15)
3.2 Vp-p (33.87 MHz)
IC103 (9), (10)
DVD: 3.3 Vp-p (24.57 MHz)
CD: 3.3 Vp-p (22.58 MHz)
33MARP
27MAVD
512FSAVD
05

## 3-5. VIDEO (1) BLOCK DIAGRAM

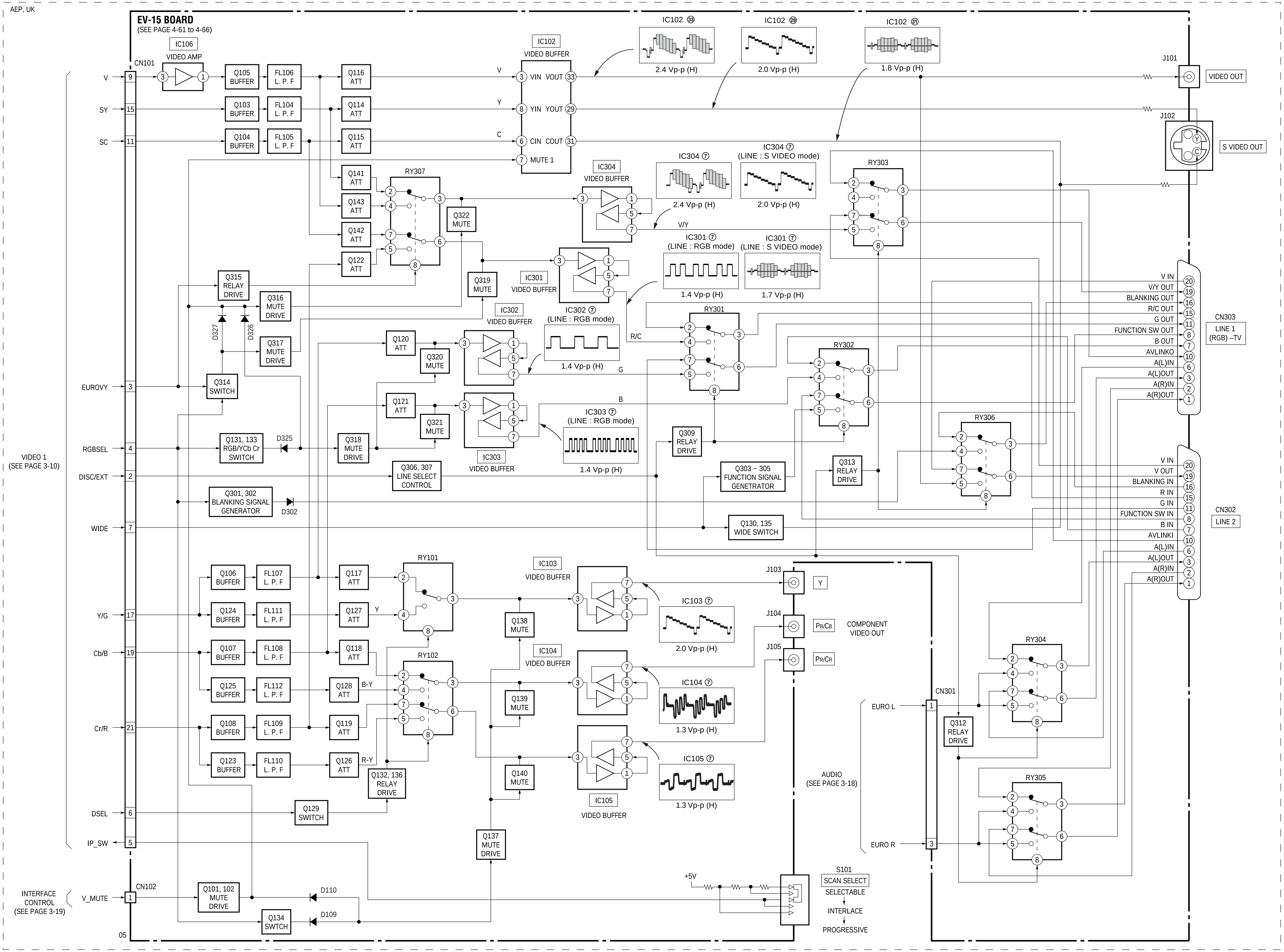

MB-107 BOARD (4/5)
(SEE PAGE 4-21, 23)
IC602 ⑩③
1.6 Vp-p (66 MHz)
SIGNAL
PROCESSOR
(SEE PAGE 3-6)
DVD 0 – 7
27M CLK
7 – 14 PI 2 – 9
2 CLKI
WE 104
MCLK 103
MA 0 – 11
80 – 83· 86 – 89· 94 – 97
A 0 – 11
MD 0 – 15
110 – 113· 116 – 119· 122 – 125· 129 – 132
DQ 0 – 15
RAS 100
CAS 102
IC603
16M SDRAM
IC602
I/P CONVERTOR
YO 0 – 9
41 – 45· 48 – 52
Y 0 – 9
2 – 9· 12 ·13
P_Y (0) – (9)
CO 0 – 9
56 – 60· 63 – 67
CBCR 0 – 9
14 – 18· 26 – 30
P_C (0) – (9)
PO 2 – 9
22 – 25· 28 – 31
PO 0 – 7
53 – 55· 58 – 62
S (2) – (9)
SYSTEM
CONTROL
(SEE PAGE 3-8)
SDA
SCL
XRST
135 SDA
136 SCL
137 SRN
4 PLL_EN
CLKO 40
32 CLKIN
63 CLKIN – 2
IC604 ㉜
3.4 Vp-p (27 MHz)
IC604 ㊷
850m Vp-p (H)
IC604 ㊸
950mVp-p (H)
IC604 ㊹
1.1 Vp-p (H)
IC604 ㊲
650mVp-p (H)
IC604 ㊴
950mVp-p (H)
IC604 ㊳
650mVp-p (H)
IC604
VIDEO ENCORDER
DAC A 44
DAC B 43
DAC C 42
DAC D 39
DAC E 38
DAC F 37
PR_V
PR_Y
PR_C
PR_Y/G
PR_CB/B
PR_CR/R
RV601
COMPOSITE
VIDEO LEVEL
RSET 1 47
RV602
COMPONENT
VIDEO LEVEL
RSET 2 35
21 SDA
22 SCLK
33 RESET B
CN601
AEP, UK
SYSTEM
CONTROL
(SEE PAGE 3-8)
RGBSEL 20 RGBSEL
EUROVY 21 EUROVY
DISC/EXT 22 DISC/EXT
DSEL
WIDE
IP_SW
15 V
9 SY
13 SC
7 Y/G
5 Cb/B
3 Cr/R
17 WIDE
18 DSEL
19 IP_SW
VIDEO 2
(SEE PAGE 3-11)
05

## 3-6. VIDEO (2) BLOCK DIAGRAM

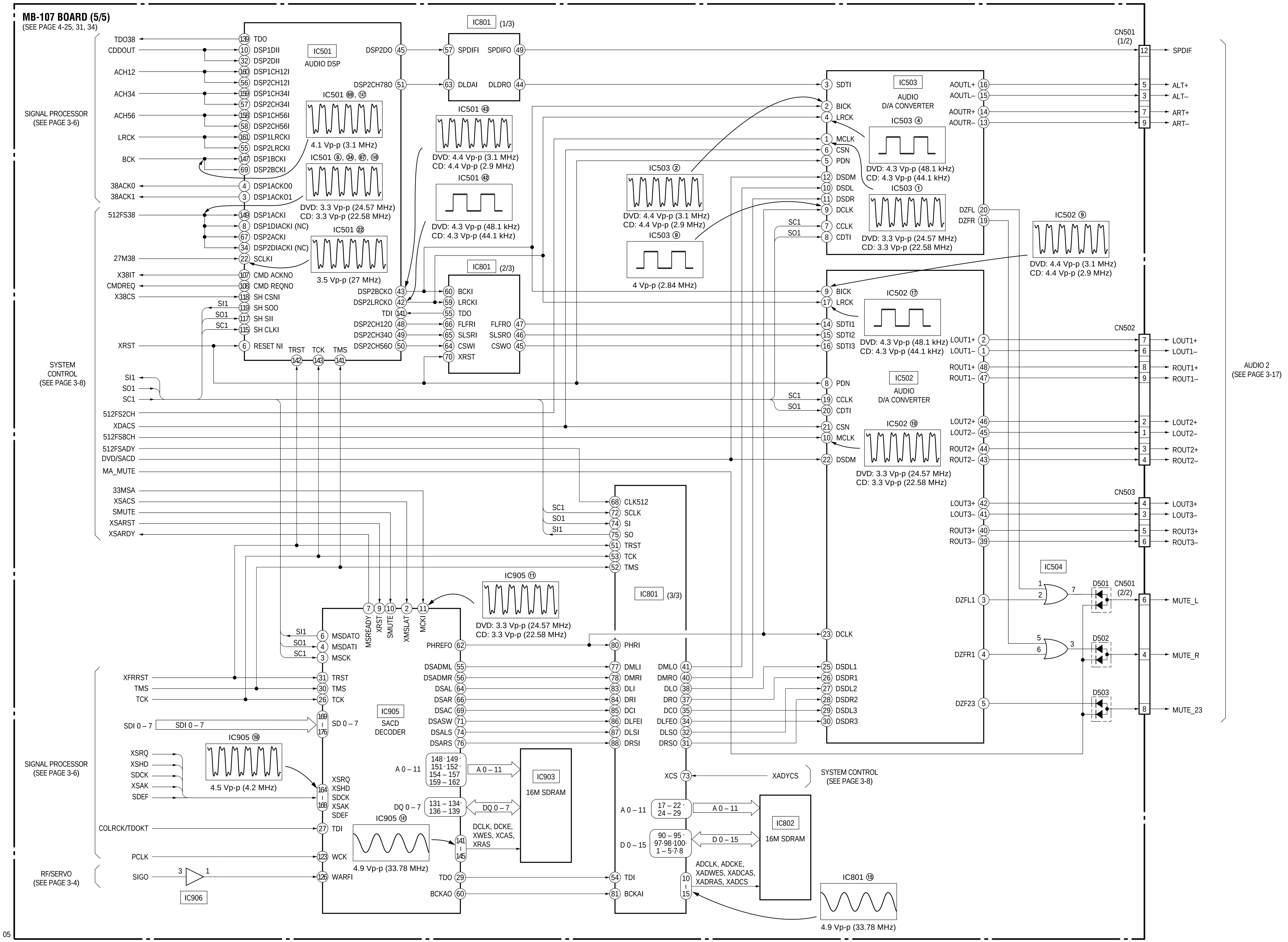

US, CND, KR
VP-58 BOARD
(SEE PAGE 4-41 to 4-44)
CN101
VIDEO 1
(SEE PAGE 3-10)
V
SY
SC
Y/G
Cb/B
Cr/R
WIDE
DSEL
IP_SW
Q105 BUFFER
FL106 L. P. F
Q116 ATT
Q103 BUFFER
FL104 L. P. F
Q114 ATT
Q104 BUFFER
FL105 L. P. F
Q115 ATT
Q106 BUFFER
FL107 L. P. F
Q117 ATT
Q124 BUFFER
FL111 L. P. F
Q127 ATT
Q107 BUFFER
FL108 L. P. F
Q118 ATT
Q125 BUFFER
FL112 L. P. F
Q128 ATT
Q108 BUFFER
FL109 L. P. F
Q119 ATT
Q123 BUFFER
FL110 L. P. F
Q126 ATT
RY101
RY102
Y
B-Y
R-Y
Q132, 136 RELAY DRIVE
Q129 SWITCH
V
Y
C
Q144 MUTE
Q142 MUTE
Q143 MUTE
Q141 MUTE DRIVE
Q138 MUTE
Q139 MUTE
Q140 MUTE
Q137 MUTE DRIVE
IC110 VIDEO BUFFER
IC111 VIDEO BUFFER
IC109 VIDEO BUFFER
IC103 VIDEO BUFFER
IC104 VIDEO BUFFER
IC105 VIDEO BUFFER
IC110 ①, ⑦
2.4 Vp-p (H)
IC111 ①, ⑦
2.0 Vp-p (H)
IC109 ①, ⑦
1.8 Vp-p (H)
IC103 ⑦
2.0 Vp-p (H)
IC104 ⑦
1.3 Vp-p (H)
IC105 ⑦
1.3 Vp-p (H)
Q130 WIDE SWITCH
Q135 WIDE SWITCH
Q134 WIDE SWITCH
J101
VIDEO OUT
J102
S1 VIDEO OUT
J103
Y
J104
PB/CB
COMPONENT VIDEO OUT
J105
PR/CR
+5V
S101
SCAN SELECT
SELECTABLE
INTERLACE
PROGRESSIVE
INTERFACE CONTROL
(SEE PAGE 3-19)
V_MUTE
CN102
Q101, 102 MUTE DRIVE
05

- Abbreviation
  CND : Canadian
  KR : Korea

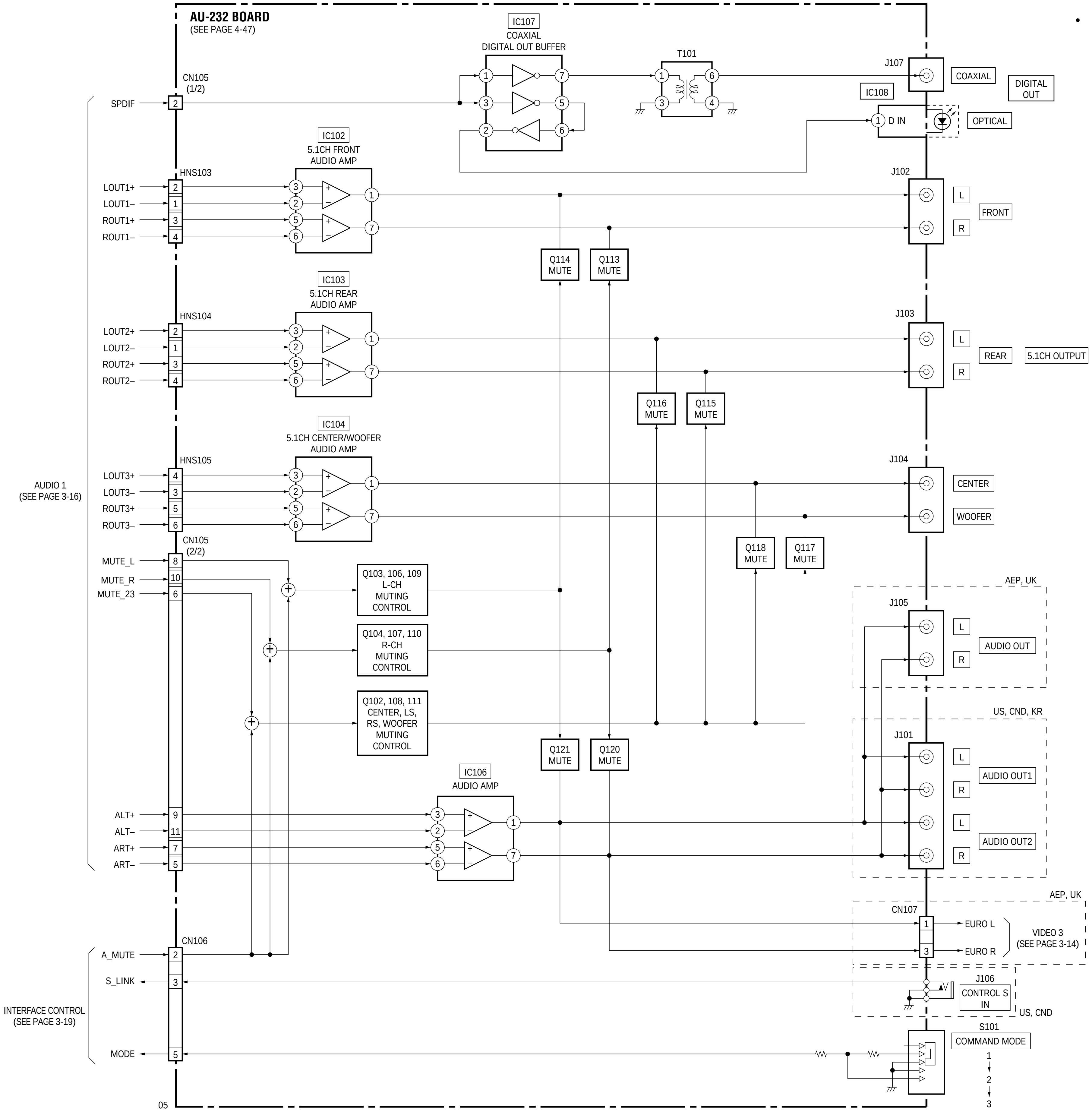
## 3-7. VIDEO (3) BLOCK DIAGRAM


AEP, UK
EV-15 BOARD
(SEE PAGE 4-61 to 4-66)
CN101
IC106
VIDEO AMP
V
SY
SC
EUROVY
RGBSEL
DISC/EXT
WIDE
Y/G
Cb/B
Cr/R
DSEL
IP_SW
VIDEO 1
(SEE PAGE 3-10)
Q105
BUFFER
FL106
L. P. F
Q116
ATT
Q103
BUFFER
FL104
L. P. F
Q114
ATT
Q104
BUFFER
FL105
L. P. F
Q115
ATT
IC102
VIDEO BUFFER
VIN VOUT
YIN YOUT
CIN COUT
MUTE 1
IC102 ㉝
2.4 Vp-p (H)
IC102 ㉙
2.0 Vp-p (H)
IC102 ㉛
1.8 Vp-p (H)
J101
VIDEO OUT
J102
S VIDEO OUT
Q141
ATT
Q143
ATT
Q142
ATT
Q122
ATT
RY307
Q322
MUTE
IC304
VIDEO BUFFER
IC304 ⑦
2.4 Vp-p (H)
IC304 ⑦
(LINE : S VIDEO mode)
2.0 Vp-p (H)
V/Y
RY303
Q315
RELAY
DRIVE
Q316
MUTE
DRIVE
Q317
MUTE
DRIVE
D327
D326
Q314
SWITCH
Q319
MUTE
IC301
VIDEO BUFFER
IC301 ⑦
(LINE : RGB mode)
1.4 Vp-p (H)
IC301 ⑦
(LINE : S VIDEO mode)
1.7 Vp-p (H)
IC302
VIDEO BUFFER
IC302 ⑦
(LINE : RGB mode)
1.4 Vp-p (H)
Q120
ATT
Q320
MUTE
R/C
G
RY301
RY302
B
Q121
ATT
Q321
MUTE
IC303
VIDEO BUFFER
IC303 ⑦
(LINE : RGB mode)
1.4 Vp-p (H)
Q131, 133
RGB/YCD Cr
SWITCH
D325
Q318
MUTE
DRIVE
Q306, 307
LINE SELECT
CONTROL
Q309
RELAY
DRIVE
Q303 – 305
FUNCTION SIGNAL
GENERATOR
Q313
RELAY
DRIVE
RY306
Q301, 302
BLANKING SIGNAL
GENERATOR
D302
Q130, 135
WIDE SWITCH
V IN
V/Y OUT
BLANKING OUT
R/C OUT
G OUT
FUNCTION SW OUT
B OUT
AVLINKO
A(L)IN
A(L)OUT
A(R)IN
A(R)OUT
CN303
LINE 1
(RGB) –TV
V IN
V OUT
BLANKING IN
R IN
G IN
FUNCTION SW IN
B IN
AVLINKI
A(L)IN
A(L)OUT
A(R)IN
A(R)OUT
CN302
LINE 2
Q106
BUFFER
FL107
L. P. F
Q117
ATT
RY101
Q124
BUFFER
FL111
L. P. F
Q127
ATT
Y
Q107
BUFFER
FL108
L. P. F
Q118
ATT
RY102
Q125
BUFFER
FL112
L. P. F
Q128
ATT
B-Y
Q108
BUFFER
FL109
L. P. F
Q119
ATT
Q123
BUFFER
FL110
L. P. F
Q126
ATT
R-Y
Q132, 136
RELAY
DRIVE
Q129
SWITCH
IC103
VIDEO BUFFER
Q138
MUTE
IC103 ⑦
2.0 Vp-p (H)
IC104
VIDEO BUFFER
Q139
MUTE
IC104 ⑦
1.3 Vp-p (H)
Q140
MUTE
IC105
VIDEO BUFFER
IC105 ⑦
1.3 Vp-p (H)
Q137
MUTE
DRIVE
J103
Y
J104
PB/CB
J105
PR/CR
COMPONENT
VIDEO OUT
CN301
EURO L
EURO R
Q312
RELAY
DRIVE
RY304
RY305
AUDIO
(SEE PAGE 3-18)
+5V
S101
SCAN SELECT
SELECTABLE
INTERLACE
PROGRESSIVE
CN102
V_MUTE
INTERFACE
CONTROL
(SEE PAGE 3-19)
Q101, 102
MUTE
DRIVE
D110
Q134
SWTCH
D109
05

## 3-8. AUDIO (1) BLOCK DIAGRAM


MB-107 BOARD (5/5)
(SEE PAGE 4-25, 31, 34)
SIGNAL PROCESSOR
(SEE PAGE 3-6)
SYSTEM CONTROL
(SEE PAGE 3-8)
TDO38
CDDOUT
ACH12
ACH34
ACH56
LRCK
BCK
38ACK0
38ACK1
512FS38
27M38
X38IT
CMDREQ
X38CS
SI1
SO1
SC1
XRST
512FS2CH
XDACS
512FS8CH
512FSADY
DVD/SACD
MA_MUTE
33MSA
XSACS
SMUTE
XSARST
XSARDY
IC501
AUDIO DSP
139 TDO
10 DSP1DII
32 DSP2DII
160 DSP1CH12I
56 DSP2CH12I
159 DSP1CH34I
57 DSP2CH34I
158 DSP1CH56I
58 DSP2CH56I
161 DSP1LRCKI
55 DSP2LRCKI
147 DSP1BCKI
69 DSP2BCKI
4 DSP1ACKO0
3 DSP1ACKO1
149 DSP1ACKI
8 DSP1DIACKI (NC)
67 DSP2ACKI
34 DSP2DIACKI (NC)
22 SCLKI
107 CMD ACKNO
108 CMD REQNO
118 SH CSNI
119 SH SOO
117 SH SII
115 SH CLKI
6 RESET NI
TRST 142
TCK 143
TMS 141
DSP2DO 45
DSP2CH780 51
DSP2BCKO 43
DSP2LRCKO 42
TDI 141
DSP2CH12O 48
DSP2CH34O 49
DSP2CH56O 50
IC501 (69), (161)
4.1 Vp-p (3.1 MHz)
IC501 (8), (34), (67), (149)
DVD: 3.3 Vp-p (24.57 MHz)
CD: 3.3 Vp-p (22.58 MHz)
IC501 (22)
3.5 Vp-p (27 MHz)
IC801 (1/3)
57 SPDIFI
SPDIFO 49
63 DLDAI
DLDRO 44
IC501 (43)
DVD: 4.4 Vp-p (3.1 MHz)
CD: 4.4 Vp-p (2.9 MHz)
IC501 (42)
DVD: 4.3 Vp-p (48.1 kHz)
CD: 4.3 Vp-p (44.1 kHz)
IC801 (2/3)
60 BCKI
59 LRCKI
55 TDO
66 FLFRI
65 SLSRI
64 CSWI
70 XRST
FLFRO 47
SLSRO 46
CSWO 45
IC503 (2)
DVD: 4.4 Vp-p (3.1 MHz)
CD: 4.4 Vp-p (2.9 MHz)
IC503 (9)
4 Vp-p (2.84 MHz)
IC503
AUDIO
D/A CONVERTER
3 SDTI
2 BICK
4 LRCK
1 MCLK
6 CSN
5 PDN
12 DSDM
10 DSDL
11 DSDR
9 DCLK
7 CCLK
8 CDTI
AOUTL+ 16
AOUTL– 15
AOUTR+ 14
AOUTR– 13
DZFL 20
DZFR 19
IC503 (4)
DVD: 4.3 Vp-p (48.1 kHz)
CD: 4.3 Vp-p (44.1 kHz)
IC503 (1)
DVD: 3.3 Vp-p (24.57 MHz)
CD: 3.3 Vp-p (22.58 MHz)
IC502 (9)
DVD: 4.4 Vp-p (3.1 MHz)
CD: 4.4 Vp-p (2.9 MHz)
CN501
(1/2)
12 SPDIF
5 ALT+
3 ALT–
7 ART+
9 ART–
IC502
AUDIO
D/A CONVERTER
9 BICK
17 LRCK
14 SDTI1
15 SDTI2
16 SDTI3
8 PDN
19 CCLK
20 CDTI
21 CSN
10 MCLK
22 DSDM
23 DCLK
25 DSDL1
26 DSDR1
27 DSDL2
28 DSDR2
29 DSDL3
30 DSDR3
IC502 (17)
DVD: 4.3 Vp-p (48.1 kHz)
CD: 4.3 Vp-p (44.1 kHz)
IC502 (10)
DVD: 3.3 Vp-p (24.57 MHz)
CD: 3.3 Vp-p (22.58 MHz)
LOUT1+ 2
LOUT1– 1
ROUT1+ 48
ROUT1– 47
LOUT2+ 46
LOUT2– 45
ROUT2+ 44
ROUT2– 43
LOUT3+ 42
LOUT3– 41
ROUT3+ 40
ROUT3– 39
DZFL1 3
DZFR1 4
DZF23 5
CN502
7 LOUT1+
6 LOUT1–
8 ROUT1+
9 ROUT1–
2 LOUT2+
1 LOUT2–
3 ROUT2+
4 ROUT2–
CN503
4 LOUT3+
3 LOUT3–
5 ROUT3+
6 ROUT3–
AUDIO 2
(SEE PAGE 3-17)
IC504
D501
D502
D503
CN501
(2/2)
6 MUTE_L
4 MUTE_R
8 MUTE_23
IC801 (3/3)
68 CLK512
72 SCLK
74 SI
75 SO
51 TRST
53 TCK
52 TMS
80 PHRI
77 DMLI
78 DMRI
83 DLI
84 DRI
85 DCI
86 DLFEI
87 DLSI
88 DRSI
DMLO 41
DMRO 40
DLO 38
DRO 37
DCO 35
DLFEO 34
DLSO 32
DRSO 31
XCS 73
XADYCS
SYSTEM CONTROL
(SEE PAGE 3-8)
A 0 – 11
17 – 22 · 24 – 29
D 0 – 15
90 – 95 · 97·98·100· 1 – 5·7·8
ADCLK, ADCKE, XADWES, XADCAS, XADRAS, XADCS
10 – 15
54 TDI
81 BCKAI
IC802
16M SDRAM
IC801 (15)
4.9 Vp-p (33.78 MHz)
IC905 (11)
DVD: 3.3 Vp-p (24.57 MHz)
CD: 3.3 Vp-p (22.58 MHz)
IC905
SACD
DECODER
7 MSREADY
9 XRST
10 SMUTE
2 XMSLAT
11 MCKI
6 MSDATO
4 MSDATI
3 MSCK
31 TRST
30 TMS
26 TCK
169 – 176 SD 0 – 7
164 – 168 XSRQ XSHD SDCK XSAK SDEF
27 TDI
123 WCK
126 WARFI
PHREFO 62
DSADML 55
DSADMR 56
DSAL 64
DSAR 66
DSAC 69
DSASW 71
DSALS 74
DSARS 76
A 0 – 11
148 · 149 · 151 · 152 · 154 – 157 159 – 162
DQ 0 – 7
131 – 134 · 136 – 139
DCLK, DCKE, XWES, XCAS, XRAS
141 – 145
TDO 29
BCKAO 60
IC903
16M SDRAM
XFRRST
TMS
TCK
SDI 0 – 7
XSRQ
XSHD
SDCK
XSAK
SDEF
COLRCK/TDOKT
PCLK
RF/SERVO
(SEE PAGE 3-4)
SIGO
IC906
IC905 (164)
4.5 Vp-p (4.2 MHz)
IC905 (141)
4.9 Vp-p (33.78 MHz)
05

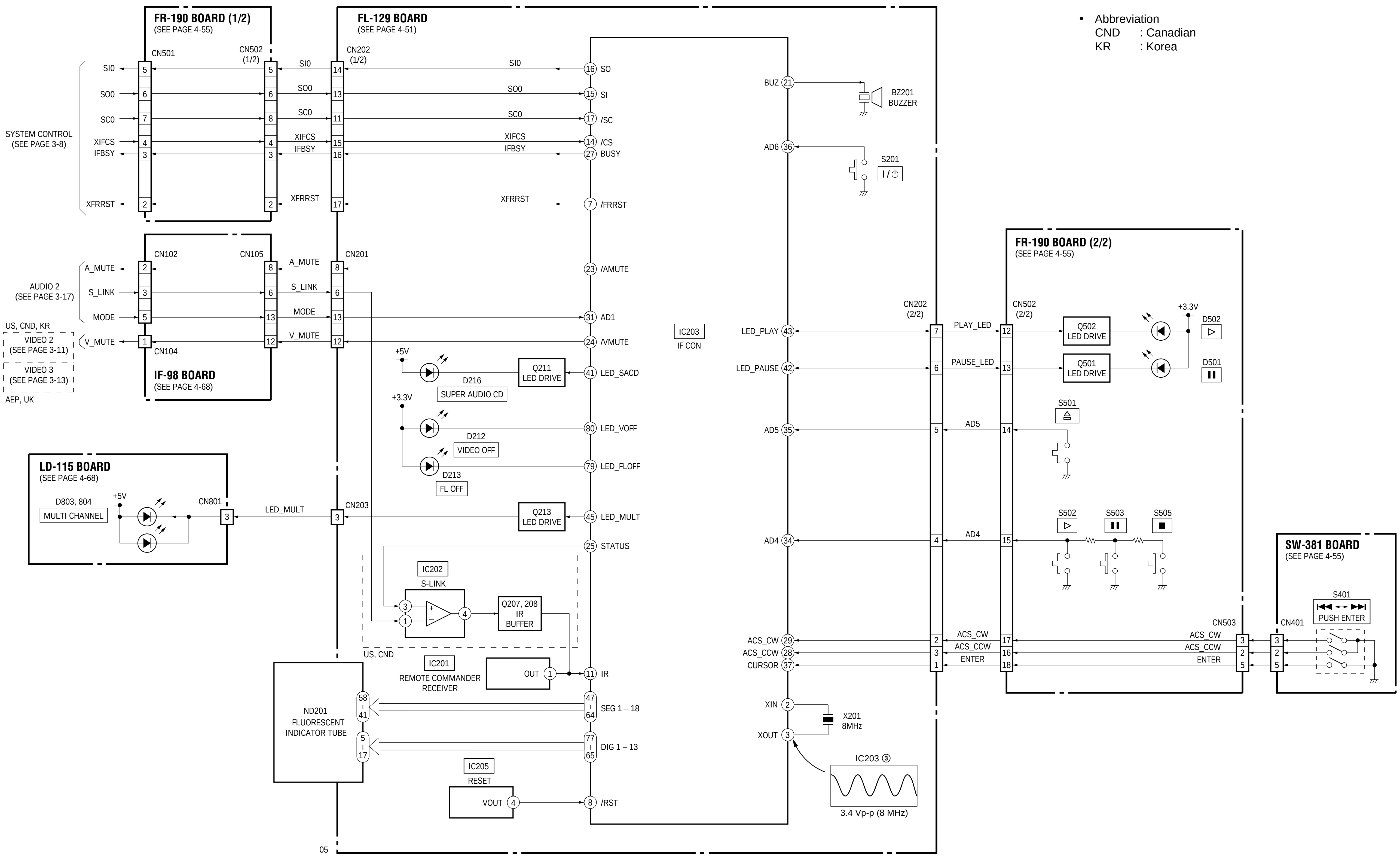
## 3-9. AUDIO (2) BLOCK DIAGRAM


AU-232 BOARD
(SEE PAGE 4-47)
IC107
COAXIAL
DIGITAL OUT BUFFER
T101
J107
COAXIAL
DIGITAL
OUT
IC108
D IN
OPTICAL
CN105
(1/2)
SPDIF
IC102
5.1CH FRONT
AUDIO AMP
HNS103
LOUT1+
LOUT1–
ROUT1+
ROUT1–
J102
L
FRONT
R
Q114
MUTE
Q113
MUTE
IC103
5.1CH REAR
AUDIO AMP
HNS104
LOUT2+
LOUT2–
ROUT2+
ROUT2–
J103
L
REAR
5.1CH OUTPUT
R
Q116
MUTE
Q115
MUTE
IC104
5.1CH CENTER/WOOFER
AUDIO AMP
HNS105
AUDIO 1
(SEE PAGE 3-16)
LOUT3+
LOUT3–
ROUT3+
ROUT3–
J104
CENTER
WOOFER
CN105
(2/2)
Q118
MUTE
Q117
MUTE
MUTE_L
MUTE_R
MUTE_23
Q103, 106, 109
L-CH
MUTING
CONTROL
AEP, UK
J105
L
AUDIO OUT
R
Q104, 107, 110
R-CH
MUTING
CONTROL
Q102, 108, 111
CENTER, LS,
RS, WOOFER
MUTING
CONTROL
US, CND, KR
J101
L
AUDIO OUT1
R
L
AUDIO OUT2
R
Q121
MUTE
Q120
MUTE
IC106
AUDIO AMP
ALT+
ALT–
ART+
ART–
AEP, UK
CN107
EURO L
EURO R
VIDEO 3
(SEE PAGE 3-14)
CN106
A_MUTE
S_LINK
J106
CONTROL S
IN
US, CND
INTERFACE CONTROL
(SEE PAGE 3-19)
S101
COMMAND MODE
1
2
3
MODE
05

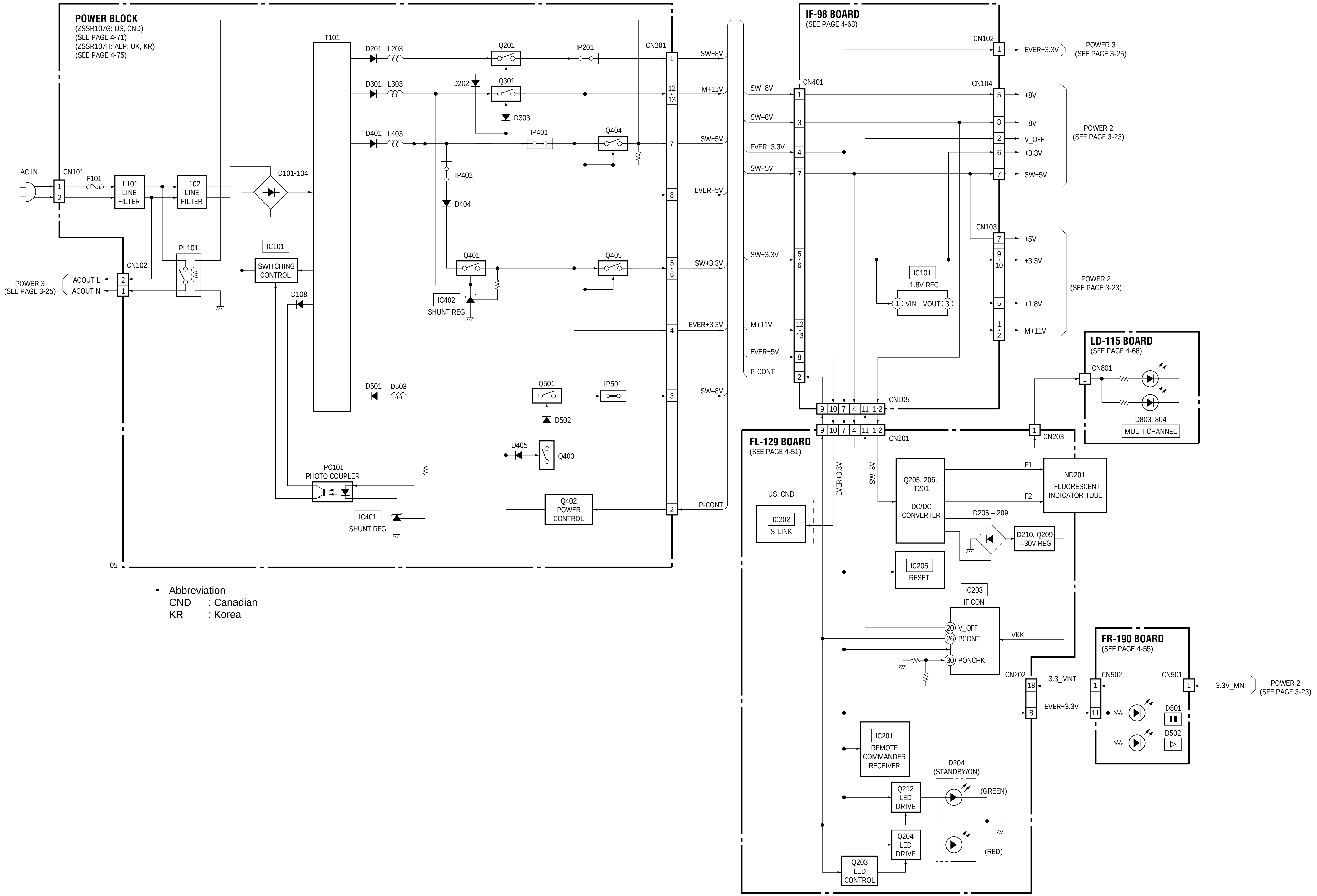
- Abbreviation
  CND : Canadian
  KR : Korea

## 3-10. INTERFACE CONTROL BLOCK DIAGRAM

- Abbreviation
  CND : Canadian
  KR : Korea

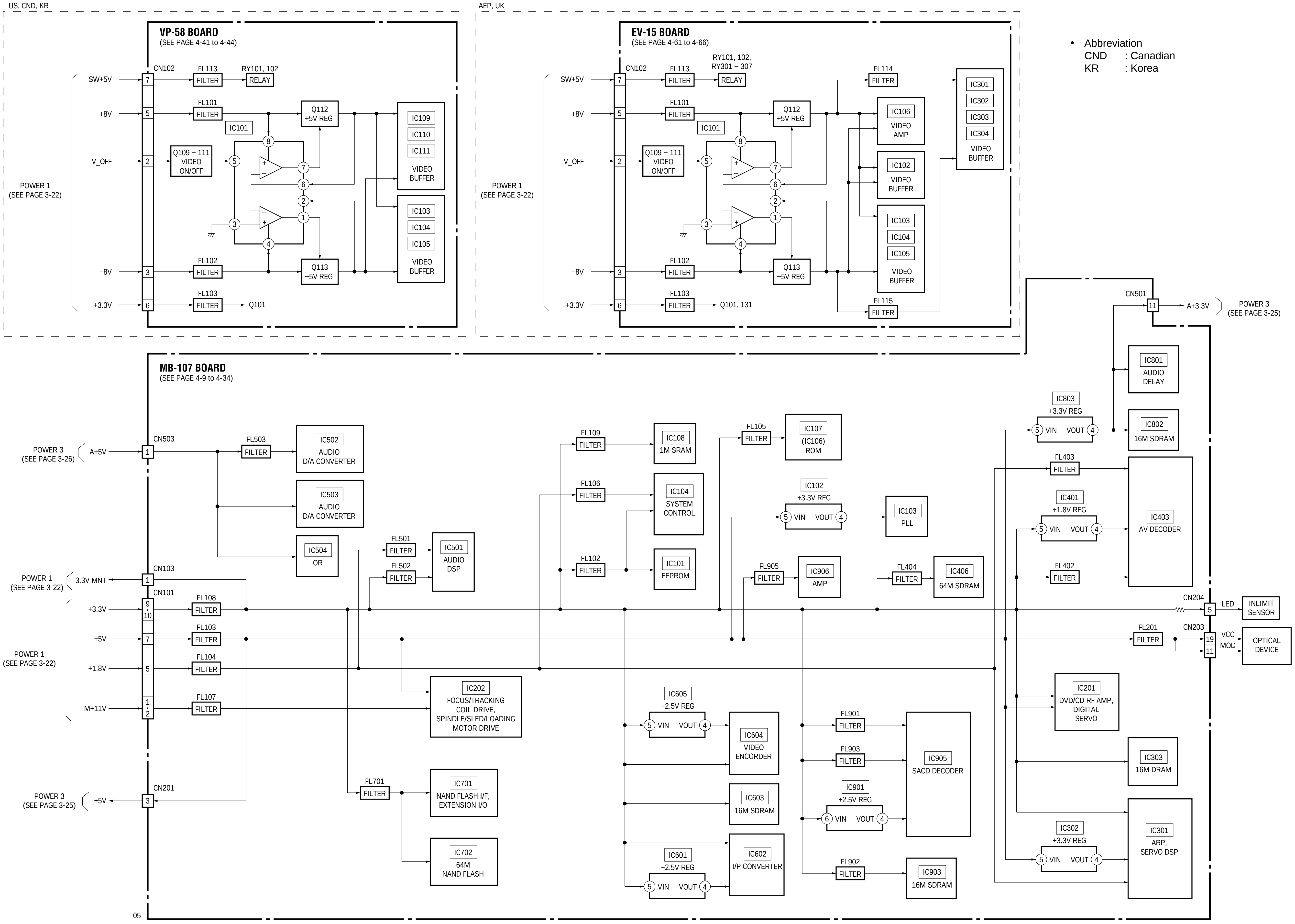

FR-190 BOARD (1/2)
(SEE PAGE 4-55)
CN501
CN502 (1/2)
FL-129 BOARD
(SEE PAGE 4-51)
CN202 (1/2)
SYSTEM CONTROL
(SEE PAGE 3-8)
SI0
SO0
SC0
XIFCS
IFBSY
XFRRST
16 SO
15 SI
17 /SC
14 /CS
27 BUSY
7 /FRRST
BUZ 21
BZ201
BUZZER
AD6 36
S201
I/⏻
CN102
CN105
CN201
A_MUTE
S_LINK
MODE
V_MUTE
AUDIO 2
(SEE PAGE 3-17)
US, CND, KR
VIDEO 2
(SEE PAGE 3-11)
VIDEO 3
(SEE PAGE 3-13)
AEP, UK
CN104
IF-98 BOARD
(SEE PAGE 4-68)
23 /AMUTE
31 AD1
24 /VMUTE
IC203
IF CON
+5V
D216
SUPER AUDIO CD
Q211
LED DRIVE
41 LED_SACD
+3.3V
D212
VIDEO OFF
80 LED_VOFF
D213
FL OFF
79 LED_FLOFF
LD-115 BOARD
(SEE PAGE 4-68)
D803, 804
MULTI CHANNEL
CN801
LED_MULT
CN203
Q213
LED DRIVE
45 LED_MULT
25 STATUS
IC202
S-LINK
Q207, 208
IR
BUFFER
US, CND
IC201
REMOTE COMMANDER
RECEIVER
OUT
11 IR
ND201
FLUORESCENT
INDICATOR TUBE
58 – 41
47 – 64
SEG 1 – 18
5 – 17
77 – 65
DIG 1 – 13
IC205
RESET
VOUT
8 /RST
05
FR-190 BOARD (2/2)
(SEE PAGE 4-55)
CN202 (2/2)
CN502 (2/2)
LED_PLAY 43
LED_PAUSE 42
PLAY_LED
PAUSE_LED
Q502
LED DRIVE
Q501
LED DRIVE
+3.3V
D502
▷
D501
❚❚
S501
≙
AD5 35
AD5
AD4 34
AD4
S502
▷
S503
❚❚
S505
■
SW-381 BOARD
(SEE PAGE 4-55)
S401
⏮ ←→ ⏭
PUSH ENTER
CN503
CN401
ACS_CW 29
ACS_CCW 28
CURSOR 37
ACS_CW
ACS_CCW
ENTER
XIN 2
XOUT 3
X201
8MHz
IC203 ③
3.4 Vp-p (8 MHz)

## 3-11. POWER (1) BLOCK DIAGRAM


POWER BLOCK
(ZSSR107G: US, CND)
(SEE PAGE 4-71)
(ZSSR107H: AEP, UK, KR)
(SEE PAGE 4-75)
AC IN
CN101
F101
L101 LINE FILTER
L102 LINE FILTER
D101-104
T101
PL101
IC101
SWITCHING CONTROL
D108
CN102
ACOUT L
ACOUT N
POWER 3 (SEE PAGE 3-25)
D201 L203
D301 L303
D401 L403
D501 D503
D202
Q201
Q301
D303
IP201
IP401
IP402
D404
Q401
Q404
Q405
IC402 SHUNT REG
Q501
IP501
D502
D405
Q403
Q402 POWER CONTROL
PC101 PHOTO COUPLER
IC401 SHUNT REG
CN201
SW+8V
M+11V
SW+5V
EVER+5V
SW+3.3V
EVER+3.3V
SW–8V
P-CONT
05
IF-98 BOARD
(SEE PAGE 4-68)
CN401
CN102
CN104
CN103
CN105
EVER+3.3V
POWER 3 (SEE PAGE 3-25)
+8V
–8V
V_OFF
+3.3V
SW+5V
POWER 2 (SEE PAGE 3-23)
+5V
+3.3V
+1.8V
M+11V
IC101 +1.8V REG
VIN VOUT
LD-115 BOARD
(SEE PAGE 4-68)
CN801
D803, 804
MULTI CHANNEL
FL-129 BOARD
(SEE PAGE 4-51)
CN201
CN203
EVER+3.3V
SW–8V
US, CND
IC202 S-LINK
Q205, 206, T201
DC/DC CONVERTER
F1
F2
ND201 FLUORESCENT INDICATOR TUBE
D206 – 209
D210, Q209 –30V REG
IC205 RESET
IC203 IF CON
V_OFF
PCONT
PONCHK
VKK
CN202
3.3_MNT
EVER+3.3V
IC201 REMOTE COMMANDER RECEIVER
D204 (STANDBY/ON)
Q212 LED DRIVE
(GREEN)
Q204 LED DRIVE
(RED)
Q203 LED CONTROL
FR-190 BOARD
(SEE PAGE 4-55)
CN502
CN501
D501
D502
3.3V_MNT
POWER 2 (SEE PAGE 3-23)

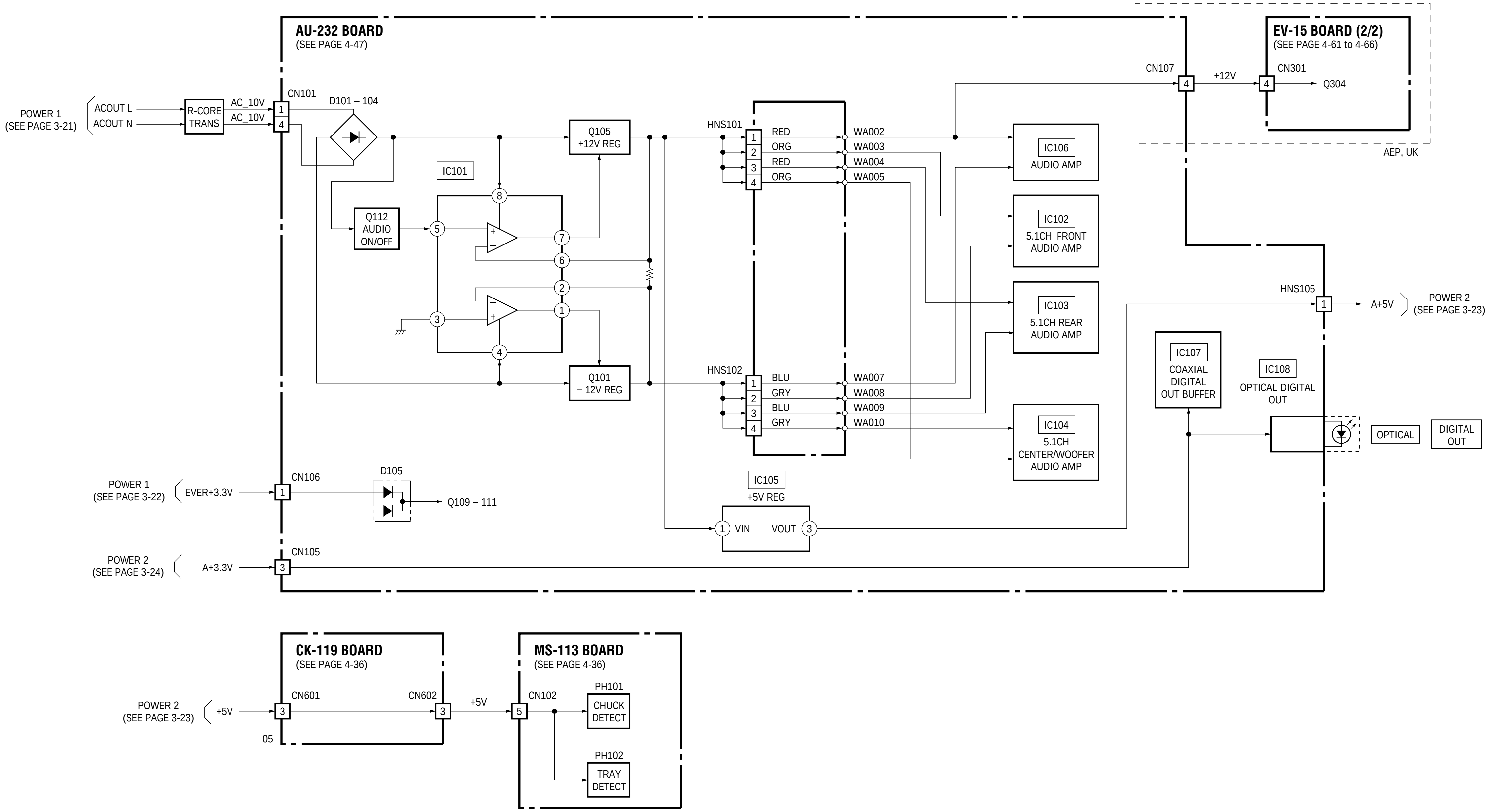
- Abbreviation
  CND : Canadian
  KR : Korea

## 3-12. POWER (2) BLOCK DIAGRAM


US, CND, KR
AEP, UK
VP-58 BOARD
(SEE PAGE 4-41 to 4-44)
EV-15 BOARD
(SEE PAGE 4-61 to 4-66)
POWER 1
(SEE PAGE 3-22)
CN102
SW+5V
+8V
V_OFF
−8V
+3.3V
FL113
FILTER
RY101, 102
RY101, 102,
RY301 – 307
RELAY
FL101
FL102
FL103
FL114
FL115
Q101
Q101, 131
IC101
Q109 – 111
VIDEO
ON/OFF
Q112
+5V REG
Q113
−5V REG
IC109
IC110
IC111
VIDEO
BUFFER
IC103
IC104
IC105
IC106
VIDEO
AMP
IC102
IC301
IC302
IC303
IC304
MB-107 BOARD
(SEE PAGE 4-9 to 4-34)
POWER 3
(SEE PAGE 3-26)
(SEE PAGE 3-25)
CN503
A+5V
FL503
IC502
AUDIO
D/A CONVERTER
IC503
IC504
OR
CN103
3.3V MNT
CN101
+3.3V
+5V
+1.8V
M+11V
FL108
FL103
FL104
FL107
CN201
+5V
FL501
FL502
IC501
AUDIO
DSP
IC202
FOCUS/TRACKING
COIL DRIVE,
SPINDLE/SLED/LOADING
MOTOR DRIVE
FL701
IC701
NAND FLASH I/F,
EXTENSION I/O
IC702
64M
NAND FLASH
FL109
FL106
FL102
IC108
1M SRAM
IC104
SYSTEM
CONTROL
IC101
EEPROM
FL105
IC107
(IC106)
ROM
IC102
+3.3V REG
VIN
VOUT
IC103
PLL
FL905
IC906
AMP
IC605
+2.5V REG
IC604
VIDEO
ENCODER
IC603
16M SDRAM
IC601
IC602
I/P CONVERTER
FL901
FL903
FL902
IC901
IC905
SACD DECODER
IC903
16M SDRAM
FL404
IC406
64M SDRAM
IC803
+3.3V REG
IC801
AUDIO
DELAY
IC802
16M SDRAM
FL403
IC401
+1.8V REG
FL402
IC403
AV DECODER
IC201
DVD/CD RF AMP,
DIGITAL
SERVO
IC303
16M DRAM
IC302
IC301
ARP,
SERVO DSP
CN501
A+3.3V
CN204
LED
INLIMIT
SENSOR
FL201
CN203
VCC
MOD
OPTICAL
DEVICE
05

- Abbreviation
  CND : Canadian
  KR : Korea

## 3-13. POWER (3) BLOCK DIAGRAM


AU-232 BOARD
(SEE PAGE 4-47)
EV-15 BOARD (2/2)
(SEE PAGE 4-61 to 4-66)
CN107
+12V
CN301
Q304
AEP, UK
POWER 1
(SEE PAGE 3-21)
ACOUT L
ACOUT N
R-CORE TRANS
AC_10V
AC_10V
CN101
D101 – 104
Q105
+12V REG
IC101
Q112
AUDIO ON/OFF
Q101
– 12V REG
HNS101
RED
ORG
RED
ORG
WA002
WA003
WA004
WA005
HNS102
BLU
GRY
BLU
GRY
WA007
WA008
WA009
WA010
IC106
AUDIO AMP
IC102
5.1CH FRONT AUDIO AMP
IC103
5.1CH REAR AUDIO AMP
IC104
5.1CH CENTER/WOOFER AUDIO AMP
HNS105
A+5V
POWER 2
(SEE PAGE 3-23)
IC107
COAXIAL DIGITAL OUT BUFFER
IC108
OPTICAL DIGITAL OUT
OPTICAL
DIGITAL OUT
POWER 1
(SEE PAGE 3-22)
EVER+3.3V
CN106
D105
Q109 – 111
IC105
+5V REG
VIN
VOUT
POWER 2
(SEE PAGE 3-24)
A+3.3V
CN105
CK-119 BOARD
(SEE PAGE 4-36)
CN601
CN602
POWER 2
(SEE PAGE 3-23)
+5V
05
+5V
MS-113 BOARD
(SEE PAGE 4-36)
CN102
PH101
CHUCK DETECT
PH102
TRAY DETECT

# SECTION 4
# PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

**THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.**

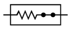
**For printed wiring boards:**

- ○——— : indicates a lead wire mounted on the component side.
- ●——— : indicates a lead wire mounted on the printed side.
- ○ : Through hole.
- ▨ : Pattern from the side which enables seeing.

(The other layers' patterns are not indicated.)

| Caution: | |
|---|---|
| Pattern face side:<br>(Side A) | Parts on the pattern face side seen from the pattern face are indicated. |
| Parts face side:<br>(Side B) | Parts on the parts face side seen from the parts face are indicated. |

**For schematic diagram:**

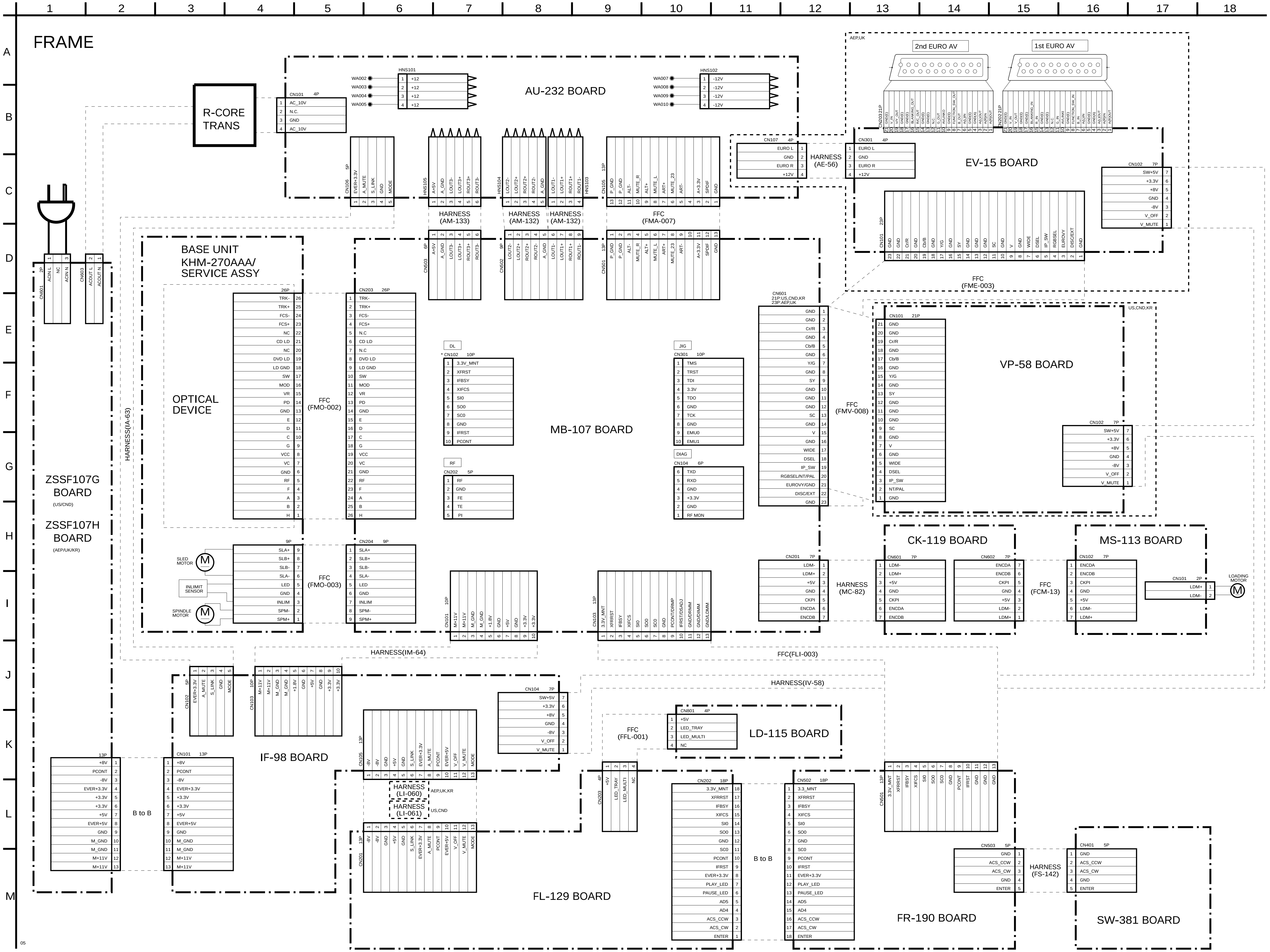
- Caution when replacing chip parts.
  New parts must be attached after removal of chip.
  Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.
- All resistors are in ohms, $^1/_4$ W (Chip resistors : $^1/_{10}$ W) unless otherwise specified.
  kΩ : 1000Ω, MΩ : 1000kΩ.
- All capacitors are in μF unless otherwise noted. pF : μμF 50V or less are not indicated except for electrolytics and tantalums.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- : nonflammable resistor.
-  : fusible resistor.
- ▭ : panel designation.
- △ : internal component.
- ▭ : adjustment for repair.
- **B+** : B+ Line.
- **B–** : B– Line.
- Circled numbers refer to waveforms.
- Voltages are dc between measurement point.
- Readings are taken with a color-bar signal on DVD reference disc and when playing CD reference disc.
- Readings are taken with a digital multimeter (DC 10MΩ).
- Voltage variations may be noted due to normal production tolerances.

| **Note:** | **Note:** |
|---|---|
| The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.<br>Replace only with part number specified. | Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.<br>Ne les remplacer que par une pièce portant le numéro spécifié. |

When indicating parts by reference number, please include the board name.

- Abbreviation
  CND : Canadian model
  KR : Korean model

## 4-1. FRAME SCHEMATIC DIAGRAM


FRAME
R-CORE TRANS
AU-232 BOARD
HNS101
HNS102
CN101 4P
AC_10V
N.C.
GND
AC_10V
EV-15 BOARD
2nd EURO AV
1st EURO AV
AEP,UK
CN107 4P
HARNESS (AE-56)
CN301 4P
EURO L
GND
EURO R
+12V
CN102 7P
SW+5V
+3.3V
+8V
GND
-8V
V_OFF
V_MUTE
FFC (FME-003)
HARNESS (AM-133)
HARNESS (AM-132)
HARNESS (AM-132)
FFC (FMA-007)
BASE UNIT KHM-270AAA/ SERVICE ASSY
OPTICAL DEVICE
FFC (FMO-002)
FFC (FMO-003)
SLED MOTOR
INLIMIT SENSOR
SPINDLE MOTOR
HARNESS(IA-63)
MB-107 BOARD
CN203 26P
CN204 9P
DL
CN102 10P
JIG
CN301 10P
RF
CN202 5P
DIAG
CN104 6P
CN601 21P:US,CND,KR 23P:AEP,UK
FFC (FMV-008)
VP-58 BOARD
CN101 21P
US,CND,KR
CK-119 BOARD
MS-113 BOARD
CN201 7P
HARNESS (MC-82)
CN601 7P
CN602 7P
FFC (FCM-13)
CN102 7P
CN101 2P
LOADING MOTOR
ZSSF107G BOARD (US/CND)
ZSSF107H BOARD (AEP/UK/KR)
CN601
CN603
HARNESS(IM-64)
FFC(FLI-003)
HARNESS(IV-58)
IF-98 BOARD
CN102 5P
CN103 10P
CN104 7P
CN105 13P
CN101 13P
B to B
FFC (FFL-001)
CN801 4P
LD-115 BOARD
HARNESS (LI-060) AEP,UK,KR
HARNESS (LI-061) US,CND
CN201 13P
CN203 4P
FL-129 BOARD
CN202 18P
B to B
CN502 18P
CN601 13P
FR-190 BOARD
CN503 5P
HARNESS (FS-142)
CN401 5P
SW-381 BOARD
05

## 4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

There are a few cases that the part isn't mounted in this model is printed on this diagram.

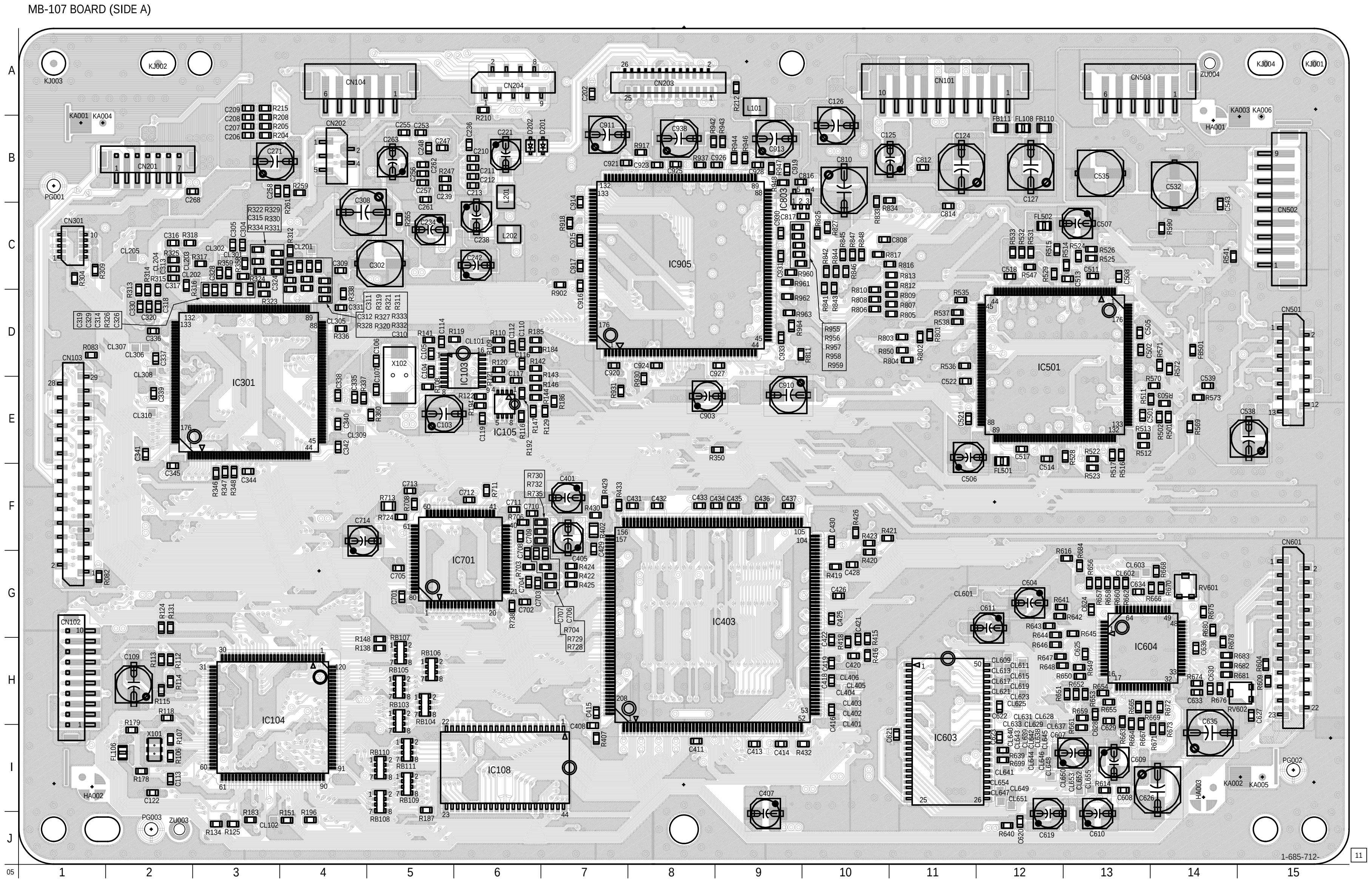
### MB-107 (SIGNAL PROCESS, SERVO) PRINTED WIRING BOARD

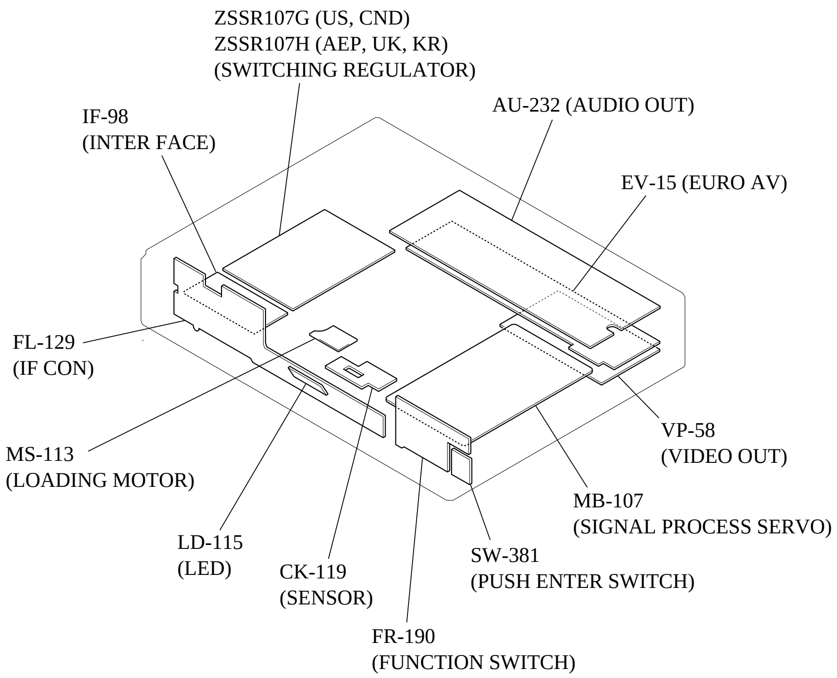
– Ref. No.: MB-107 board; 3,000 series –

**LF** : Uses unleaded solder.

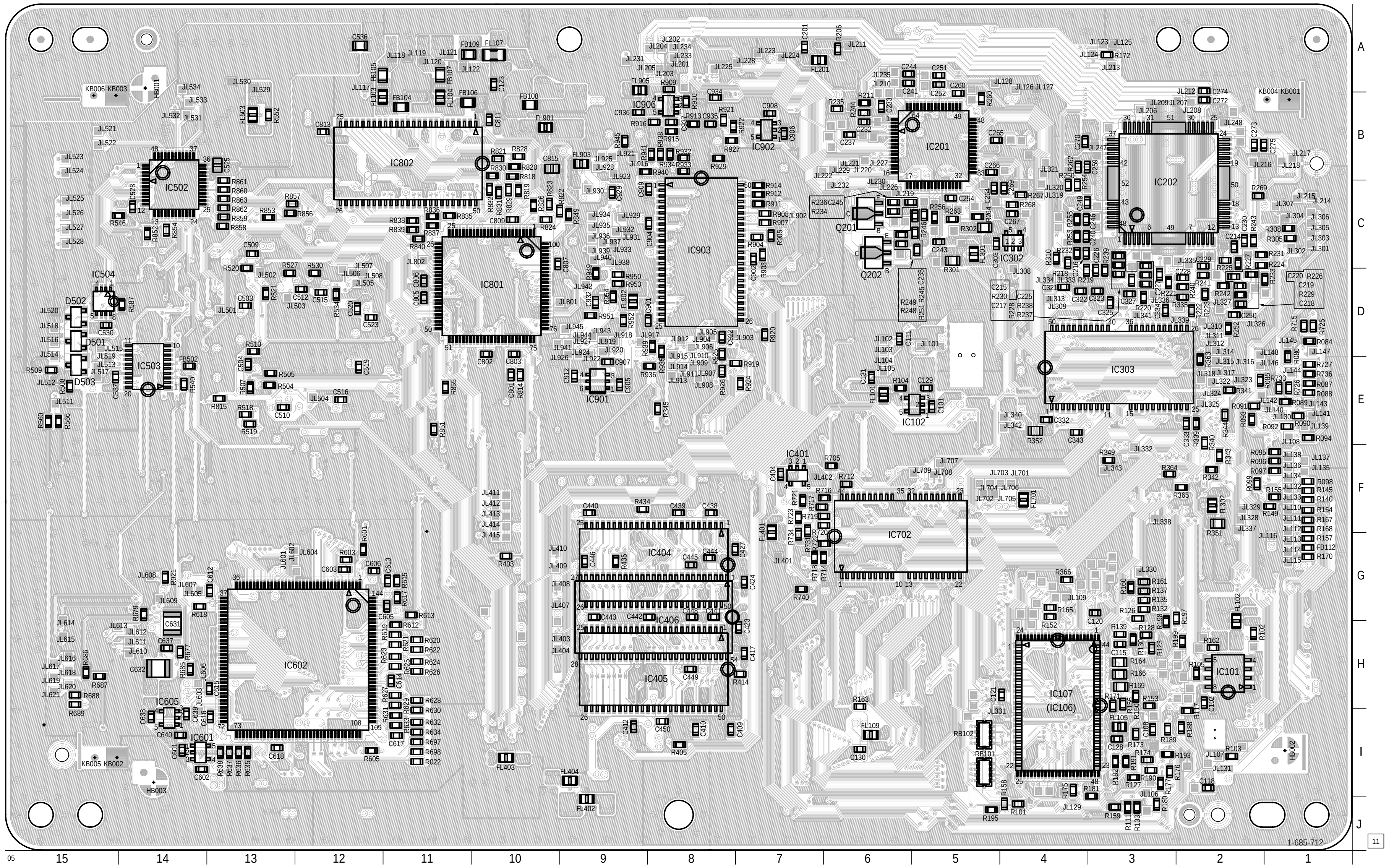
MB-107 BOARD (A SIDE)

| | |
|---|---|
| CN101 | A-11 |
| CN102 | G-1 |
| CN103 | D-1 |
| CN104 | A-4 |
| CN201 | B-2 |
| CN203 | A-8 |
| CN501 | D-15 |
| CN601 | F-15 |
| IC103 | D-6 |
| IC104 | H-3 |
| IC108 | I-6 |
| IC301 | E-3 |
| IC403 | G-9 |
| IC501 | E-12 |
| IC603 | I-11 |
| IC604 | H-13 |
| IC701 | G-6 |
| IC803 | B-9 |
| IC905 | C-8 |


MB-107 BOARD (SIDE A)
A
B
C
D
E
F
G
H
I
J
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
CN101
CN102
CN103
CN104
CN201
CN202
CN203
CN204
CN301
CN501
CN502
CN503
CN601
IC103
IC104
IC105
IC108
IC301
IC403
IC501
IC603
IC604
IC701
IC803
IC905
1-685-712-
11
05


ZSSR107G (US, CND)
ZSSR107H (AEP, UK, KR)
(SWITCHING REGULATOR)
IF-98
(INTER FACE)
AU-232 (AUDIO OUT)
EV-15 (EURO AV)
FL-129
(IF CON)
MS-113
(LOADING MOTOR)
VP-58
(VIDEO OUT)
MB-107
(SIGNAL PROCESS SERVO)
LD-115
(LED)
CK-119
(SENSOR)
SW-381
(PUSH ENTER SWITCH)
FR-190
(FUNCTION SWITCH)

MB-107 BOARD (SIDE B)


IC101
IC102
IC107
(IC106)
IC201
IC202
IC302
IC303
IC401
IC404
IC405
IC406
IC502
IC503
IC504
IC601
IC602
IC605
IC702
IC801
IC802
IC901
IC902
IC903
IC906
D501
D502
D503
Q201
Q202
A
B
C
D
E
F
G
H
I
J
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
1-685-712-
11
05

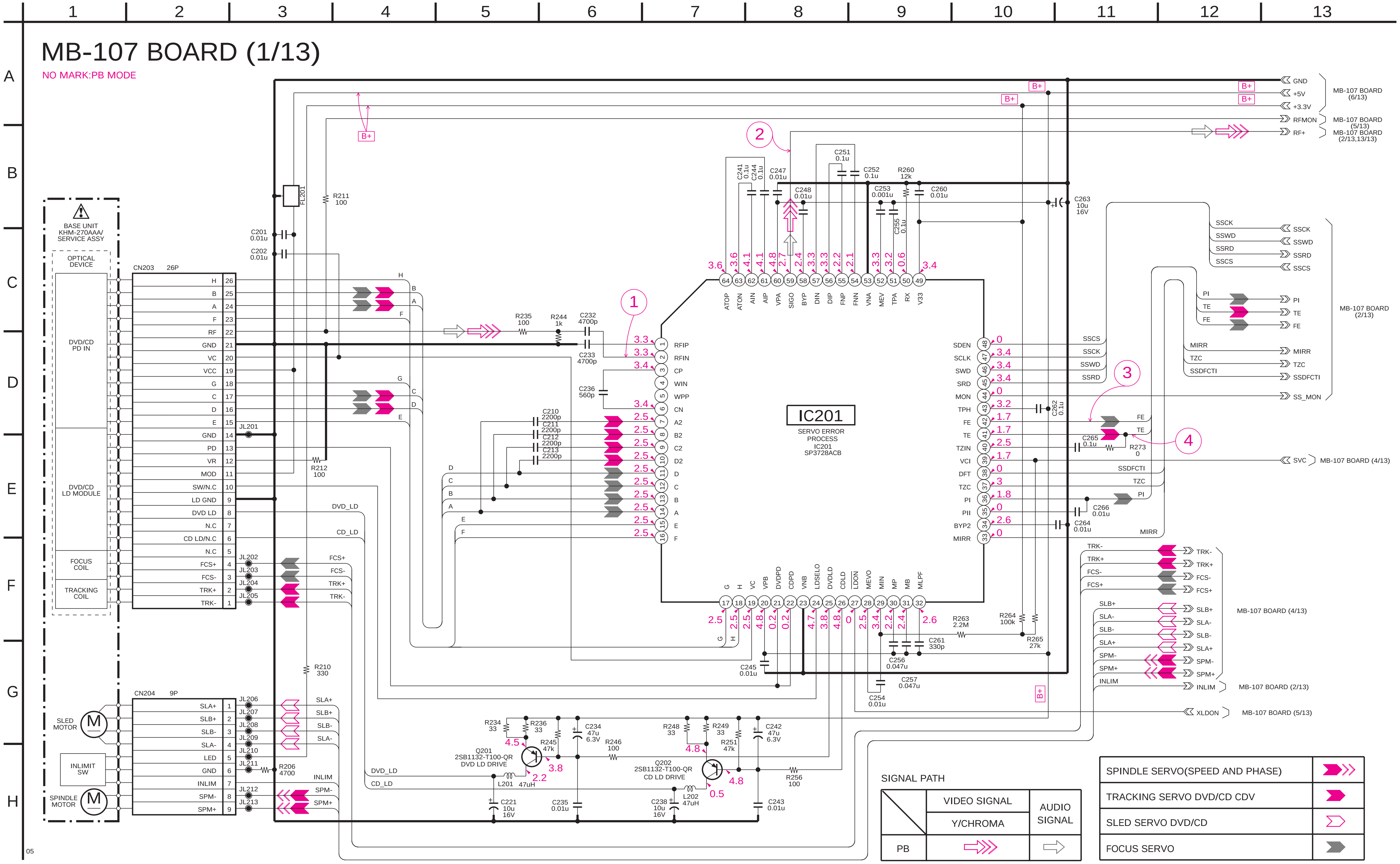
MB-107 BOARD (B SIDE)

| | |
|---|---|
| D501 | D-15 |
| D502 | D-15 |
| D503 | D-15 |
| | |
| IC101 | H-2 |
| IC102 | E-6 |
| IC107 | H-4 |
| IC201 | B-5 |
| IC202 | B-3 |
| IC302 | C-4 |
| IC303 | E-3 |
| IC401 | F-7 |
| IC404 | G-8 |
| IC405 | H-8 |
| IC406 | H-8 |
| IC502 | C-14 |
| IC503 | E-14 |
| IC504 | C-15 |
| IC601 | I-14 |
| IC602 | H-12 |
| IC605 | H-14 |
| IC702 | F-6 |
| IC801 | D-10 |
| IC802 | B-12 |
| IC901 | E-9 |
| IC903 | C-8 |
| IC906 | B-8 |
| | |
| Q201 | C-6 |
| Q202 | D-6 |

## MB-107 (RF AMP, SERVO) SCHEMATIC DIAGRAM • See page 4-5 for printed wiring board.

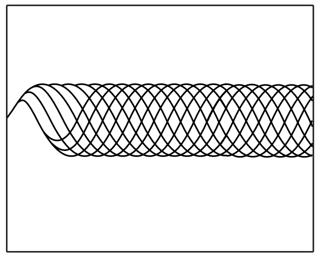
– Ref. No.: MB-107 board; 3,000 series –

| | |
|---|---|
| The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified. | Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié. |


1 2 3 4 5 6 7 8 9 10 11 12 13
A B C D E F G H
MB-107 BOARD (1/13)
NO MARK:PB MODE
BASE UNIT KHM-270AAA/ SERVICE ASSY
OPTICAL DEVICE
DVD/CD PD IN
DVD/CD LD MODULE
FOCUS COIL
TRACKING COIL
SLED MOTOR
INLIMIT SW
SPINDLE MOTOR
CN203 26P
CN204 9P
FL201
R211 100
C201 0.01u
C202 0.01u
R235 100
R244 1k
C232 4700p
C233 4700p
C236 560p
R212 100
R210 330
R206 4700
IC201
SERVO ERROR PROCESS
IC201 SP3728ACB
Q201 2SB1132-T100-QR DVD LD DRIVE
Q202 2SB1132-T100-QR CD LD DRIVE
L201 47uH
L202 47uH
DVD_LD
CD_LD
B+
GND
+5V
+3.3V
RFMON
RF+
MB-107 BOARD (6/13)
MB-107 BOARD (5/13)
MB-107 BOARD (2/13,13/13)
SSCK SSWD SSRD SSCS
PI TE FE
MB-107 BOARD (2/13)
MIRR TZC SSDFCTI SS_MON
SVC
MB-107 BOARD (4/13)
TRK- TRK+ FCS- FCS+
SLB+ SLA- SLB- SLA+ SPM- SPM+ INLIM
XLDON
SIGNAL PATH
VIDEO SIGNAL
Y/CHROMA
AUDIO SIGNAL
PB
SPINDLE SERVO(SPEED AND PHASE)
TRACKING SERVO DVD/CD CDV
SLED SERVO DVD/CD
FOCUS SERVO
05

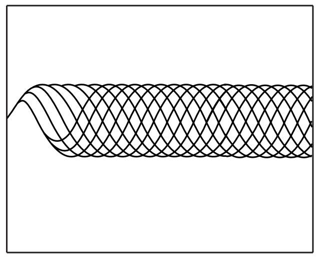
**• Waveforms**

❶ IC201 ② (DVD play)
200 mV/DIV 50 ns/DIV



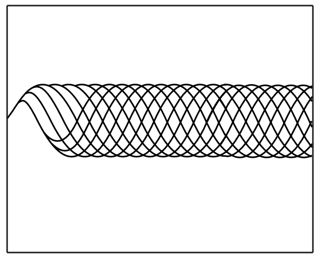
570 mVp-p

❶ IC201 ② (CD play)
200 mV/DIV 200 ns/DIV



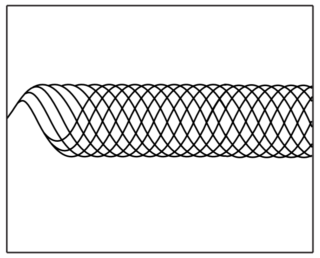
550 mVp-p

❷ IC201 (59) (DVD play)
500 mV/DIV 50 ns/DIV



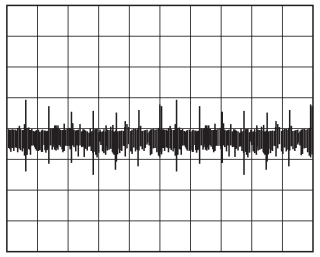
1.4 Vp-p

❷ IC201 (59) (CD play)
500 mV/DIV 200 ns/DIV



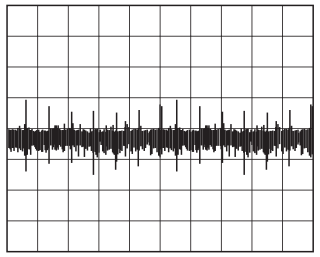
1.4 Vp-p

❸ IC201 ㊷ (DVD play)
100 mV/DIV 50 ms/DIV



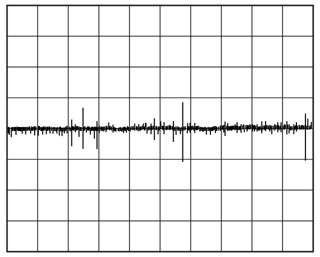
180 mVp-p

❸ IC201 ㊷ (CD play)
500 mV/DIV 50 ms/DIV



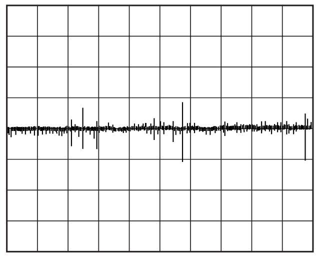
860 mVp-p

❹ IC201 ㊶ (DVD play)
500 mV/DIV 50 ms/DIV



1.5 Vp-p

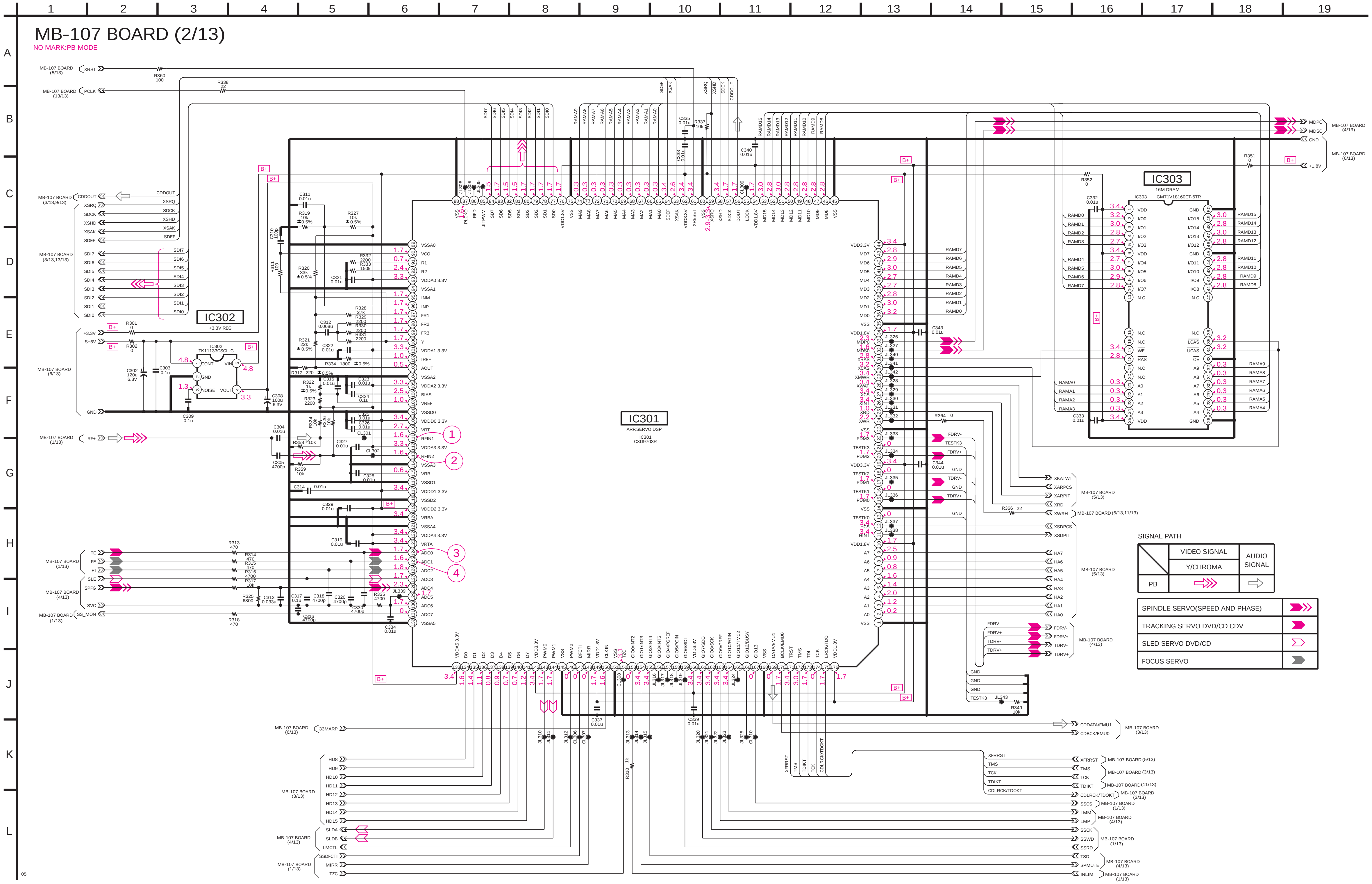
❹ IC201 ㊶ (CD play)
500 mV/DIV 200 ns/DIV



1.7 Vp-p

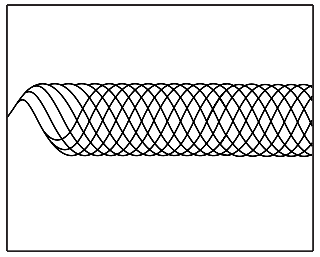
## MB-107 (ARP, SERVO DSP) SCHEMATIC DIAGRAM • See page 4-5 for printed wiring board.

– Ref. No.: MB-107 board; 3,000 series –


MB-107 BOARD (2/13)
NO MARK:PB MODE
IC301
ARP,SERVO DSP
IC301
CXD9703R
IC302
+3.3V REG
IC302
TK11133CSCL-G
IC303
16M DRAM
IC303
GM71V18160CT-6TR
MB-107 BOARD (5/13)
MB-107 BOARD (13/13)
MB-107 BOARD (3/13,9/13)
MB-107 BOARD (3/13,11/13)
MB-107 BOARD (6/13)
MB-107 BOARD (1/13)
MB-107 BOARD (4/13)
MB-107 BOARD (3/13)
SIGNAL PATH
VIDEO SIGNAL
Y/CHROMA
AUDIO SIGNAL
PB
SPINDLE SERVO(SPEED AND PHASE)
TRACKING SERVO DVD/CD CDV
SLED SERVO DVD/CD
FOCUS SERVO
05

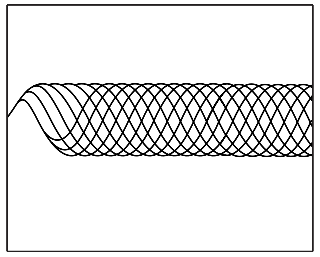
### • Waveforms

❶ IC301 (111) (DVD play)
500 mV/DIV 100 ns/DIV



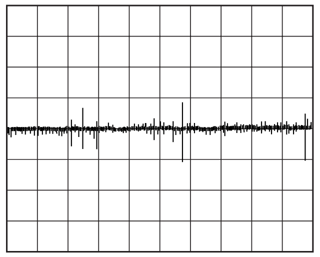
1.4 Vp-p

❷ IC301 (113) (CD play)
500 mV/DIV 200 ns/DIV



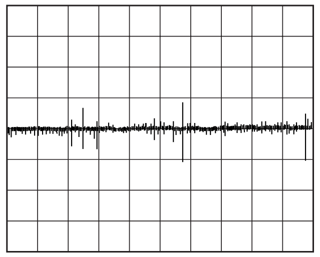
1.4 Vp-p

❸ IC301 (124) (DVD play)
500 mV/DIV 50 ms/DIV



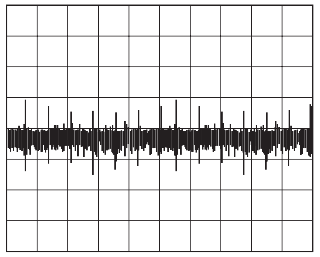
1.4 Vp-p

❸ IC301 (124) (CD play)
500 mV/DIV 200 ms/DIV



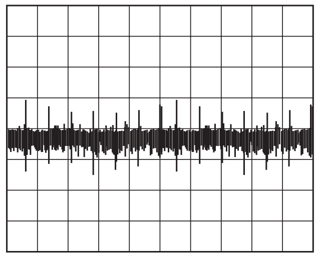
1.7 Vp-p

❹ IC301 (125) (DVD play)
100 mV/DIV 50 ms/DIV



160 mVp-p

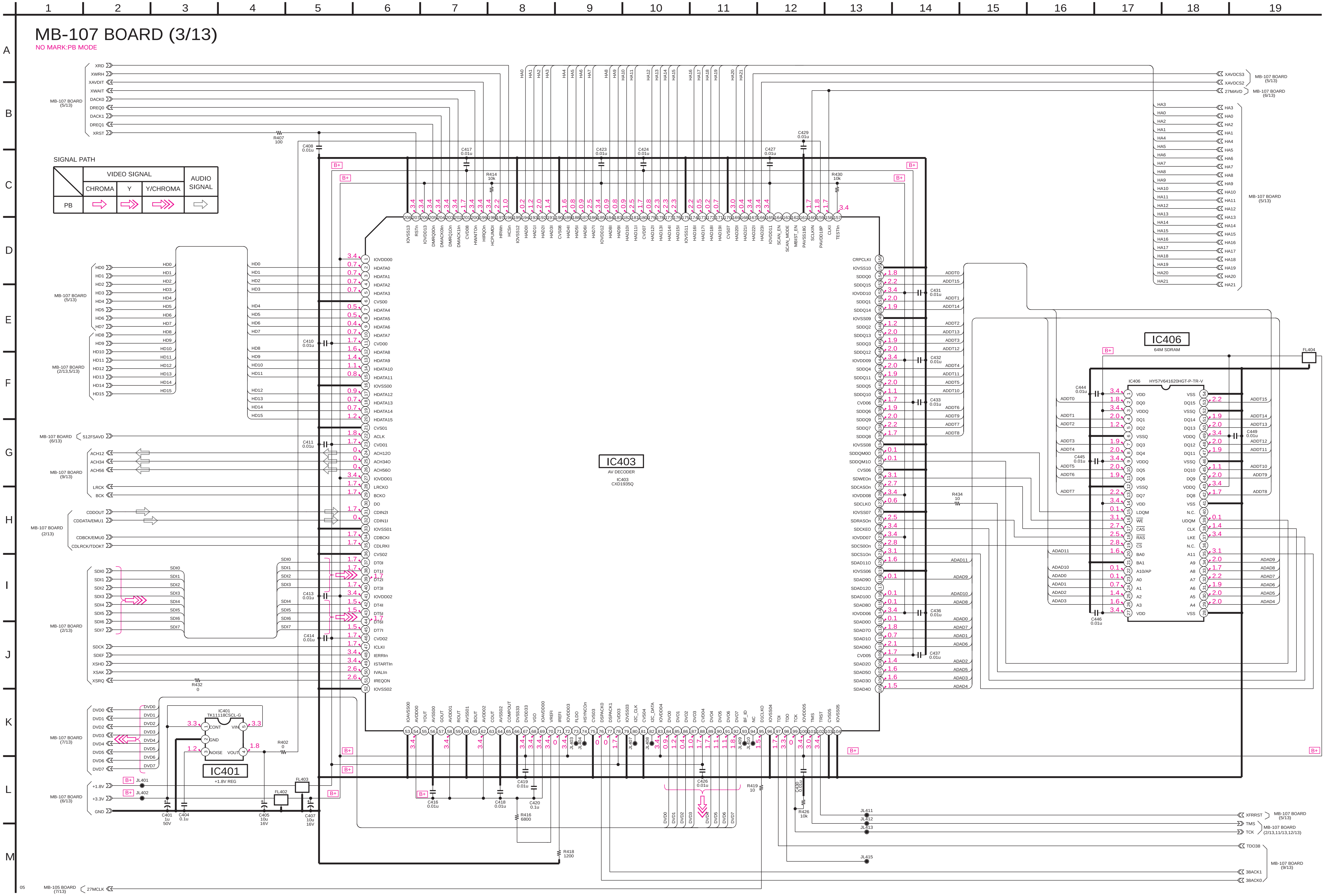
❹ IC301 (125) (CD play)
500 mV/DIV 50 ms/DIV



860 mVp-p

## MB-107 (AV DECODER) SCHEMATIC DIAGRAM • See page 4-5 for printed wiring board.

– Ref. No.: MB-107 board; 3,000 series –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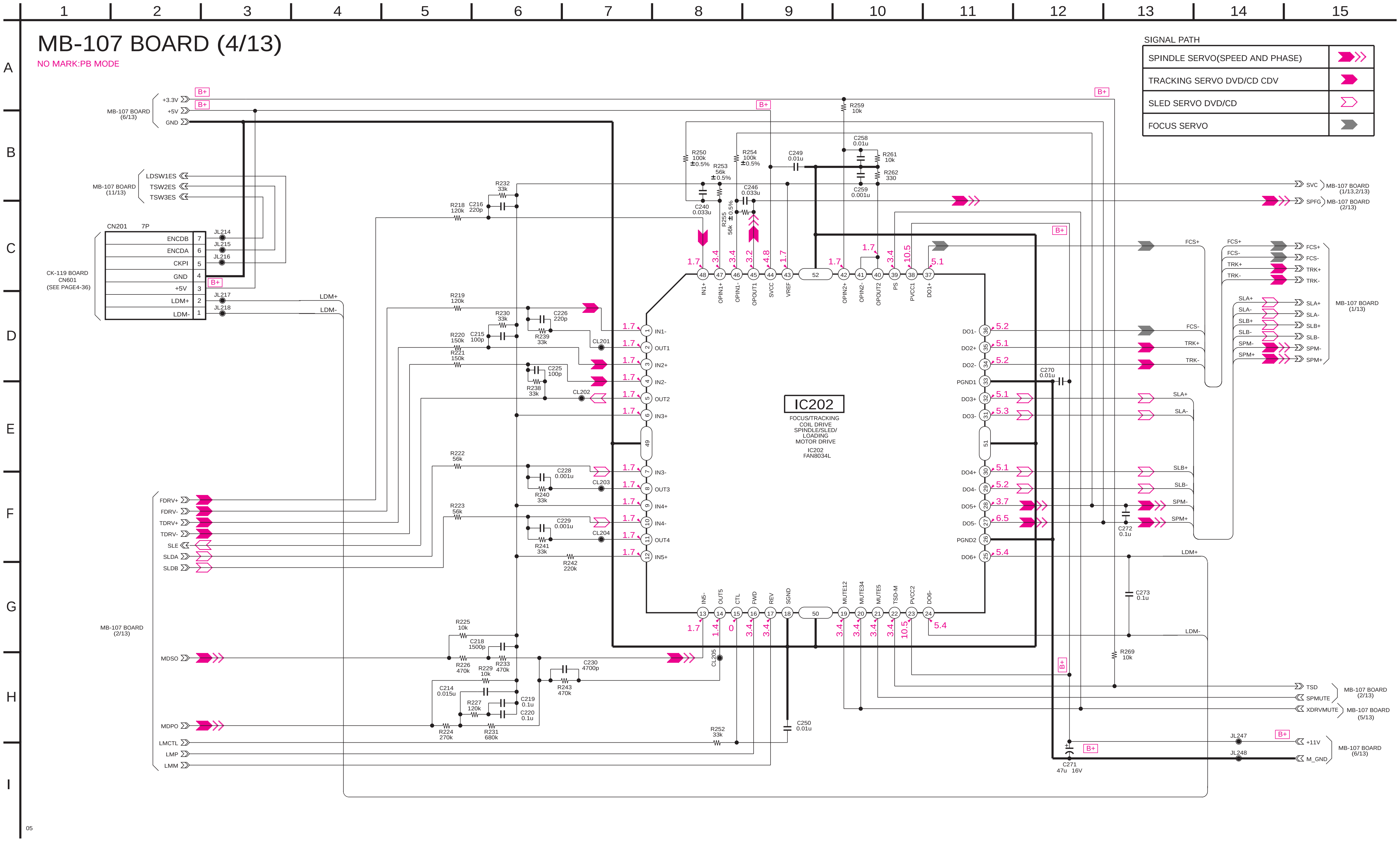
D
E
F
G
H
I
J
K
L
M
MB-107 BOARD (3/13)
NO MARK:PB MODE
SIGNAL PATH
VIDEO SIGNAL
CHROMA
Y
Y/CHROMA
AUDIO SIGNAL
PB
IC403
AV DECODER
IC403
CXD1935Q
IC406
64M SDRAM
IC406 HY57V641620HGT-P-TR-V
IC401
TK11118CSCL-G
+1.8V REG
MB-107 BOARD (5/13)
MB-107 BOARD (6/13)
MB-107 BOARD (2/13,5/13)
MB-107 BOARD (9/13)
MB-107 BOARD (2/13)
MB-107 BOARD (7/13)
MB-107 BOARD (2/13,11/13,12/13)
MB-105 BOARD (7/13)
XRD
XWRH
XAVDIT
XWAIT
DACK0
DREQ0
DACK1
DREQ1
XRST
XAVDCS3
XAVDCS2
27MAVD
512FSAVD
ACH12
ACH34
ACH56
LRCK
BCK
CDDOUT
CDDATA/EMU1
CDBCK/EMU0
CDLRCK/TDOKT
SCDK
SDEF
XSHD
XSAK
XSRQ
+1.8V
+3.3V
GND
XFRRST
TMS
TCK
TDO38
38ACK1
38ACK0
27MCLK
R407 100
R414 10k
R430 10k
R432 0
R402 0
R434 10
R416 6800
R418 1200
R419 10
R426 10k
C408 0.01u
C417 0.01u
C423 0.01u
C424 0.01u
C427 0.01u
C429 0.01u
C401 1u 50V
C404 0.1u
C405 10u 16V
C407 10u 16V
C416 0.01u
C418 0.01u
C419 0.01u
C420 0.1u
C426 0.01u
FL402
FL403
FL404
JL401
JL402
JL411
JL412
JL413
JL415
B+
05

AV DECODER
MB-107 (3/13)

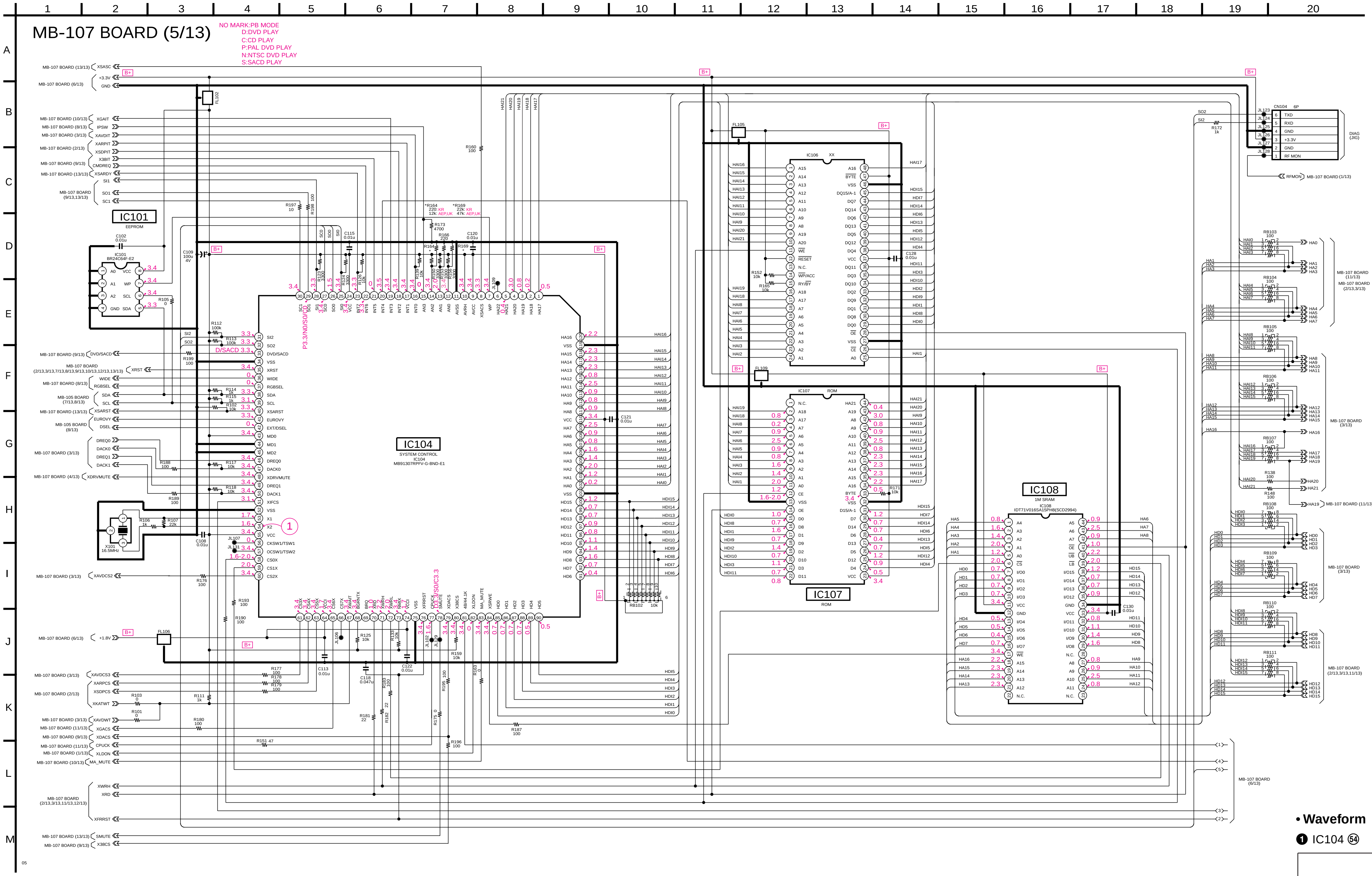
## MB-107 (MOTOR DRIVE) SCHEMATIC DIAGRAM • See page 4-5 for printed wiring board.

– Ref. No.: MB-107 board; 3,000 series –


MB-107 BOARD (4/13)
NO MARK:PB MODE
SIGNAL PATH
SPINDLE SERVO(SPEED AND PHASE)
TRACKING SERVO DVD/CD CDV
SLED SERVO DVD/CD
FOCUS SERVO
IC202
FOCUS/TRACKING COIL DRIVE SPINDLE/SLED/ LOADING MOTOR DRIVE
IC202 FAN8034L
MB-107 BOARD (6/13)
+3.3V
+5V
GND
MB-107 BOARD (11/13)
LDSW1ES
TSW2ES
TSW3ES
CN201 7P
ENCDB
ENCDA
CKPI
GND
+5V
LDM+
LDM-
CK-119 BOARD CN601 (SEE PAGE4-36)
MB-107 BOARD (2/13)
FDRV+
FDRV-
TDRV+
TDRV-
SLE
SLDA
SLDB
MDSO
MDPO
LMCTL
LMP
LMM
SVC
SPFG
MB-107 BOARD (1/13,2/13)
MB-107 BOARD (2/13)
FCS+
FCS-
TRK+
TRK-
SLA+
SLA-
SLB+
SLB-
SPM-
SPM+
MB-107 BOARD (1/13)
TSD
SPMUTE
XDRVMUTE
MB-107 BOARD (2/13)
MB-107 BOARD (5/13)
+11V
M_GND
MB-107 BOARD (6/13)
IN1-
OUT1
IN2+
IN2-
OUT2
IN3+
IN3-
OUT3
IN4+
IN4-
OUT4
IN5+
DO1-
DO2+
DO2-
PGND1
DO3+
DO3-
DO4+
DO4-
DO5+
DO5-
PGND2
DO6+
IN1+
OPIN1+
OPIN1-
OPOUT1
SVCC
VREF
OPIN2+
OPIN2-
OPOUT2
PS
PVCC1
DO1+
IN5-
OUT5
CTL
FWD
REV
SGND
MUTE12
MUTE34
MUTE5
TSD-M
PVCC2
DO6-
R218 120k
C216 220p
R232 33k
R219 120k
R230 33k
C226 220p
R239 33k
R220 150k
C215 100p
R221 150k
C225 100p
R238 33k
R222 56k
C228 0.001u
R240 33k
R223 56k
C229 0.001u
R241 33k
R242 220k
R225 10k
C218 1500p
R226 470k
R229 10k
R233 470k
C230 4700p
R243 470k
C214 0.015u
R227 120k
C219 0.1u
C220 0.1u
R224 270k
R231 680k
R252 33k
C250 0.01u
R250 100k ±0.5%
R253 56k ±0.5%
R254 100k ±0.5%
R255 56k ±0.5%
C240 0.033u
C246 0.033u
C249 0.01u
C258 0.01u
C259 0.001u
R259 10k
R261 10k
R262 330
C270 0.01u
C272 0.1u
C273 0.1u
R269 10k
C271 47u 16V
JL214
JL215
JL216
JL217
JL218
JL247
JL248
CL201
CL202
CL203
CL204
CL205
B+
1.7
3.4
3.2
4.8
5.1
10.5
5.2
5.3
3.7
6.5
5.4
1.4
0
05

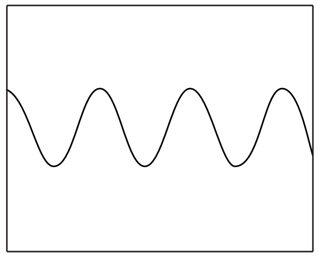
## MB-107 (SYSTEM CONTROL) SCHEMATIC DIAGRAM • See page 4-5 for printed wiring board.

– Ref. No.: MB-107 board; 3,000 series –


MB-107 BOARD (5/13)
NO MARK:PB MODE
D:DVD PLAY
C:CD PLAY
P:PAL DVD PLAY
N:NTSC DVD PLAY
S:SACD PLAY
IC101
EEPROM
IC101 BR24C64F-E2
IC104
SYSTEM CONTROL
IC104 MB91307RPFV-G-BND-E1
IC106
IC107
ROM
IC108
1M SRAM
IC108 IDT71V016SA15PHB(SCD2994)
CN104 6P
TXD
RXD
GND
+3.3V
GND
RF MON
DIAG (JIG)
X101 16.5MHz
FL102
FL105
FL106
FL109
B+
RFMON
MB-107 BOARD (1/13)
MB-107 BOARD (6/13)
MB-107 BOARD (3/13)
MB-107 BOARD (11/13)
MB-107 BOARD (13/13)
MB-107 BOARD (2/13,3/13)
MB-105 BOARD (7/13,8/13)
1
05

**• Waveform**

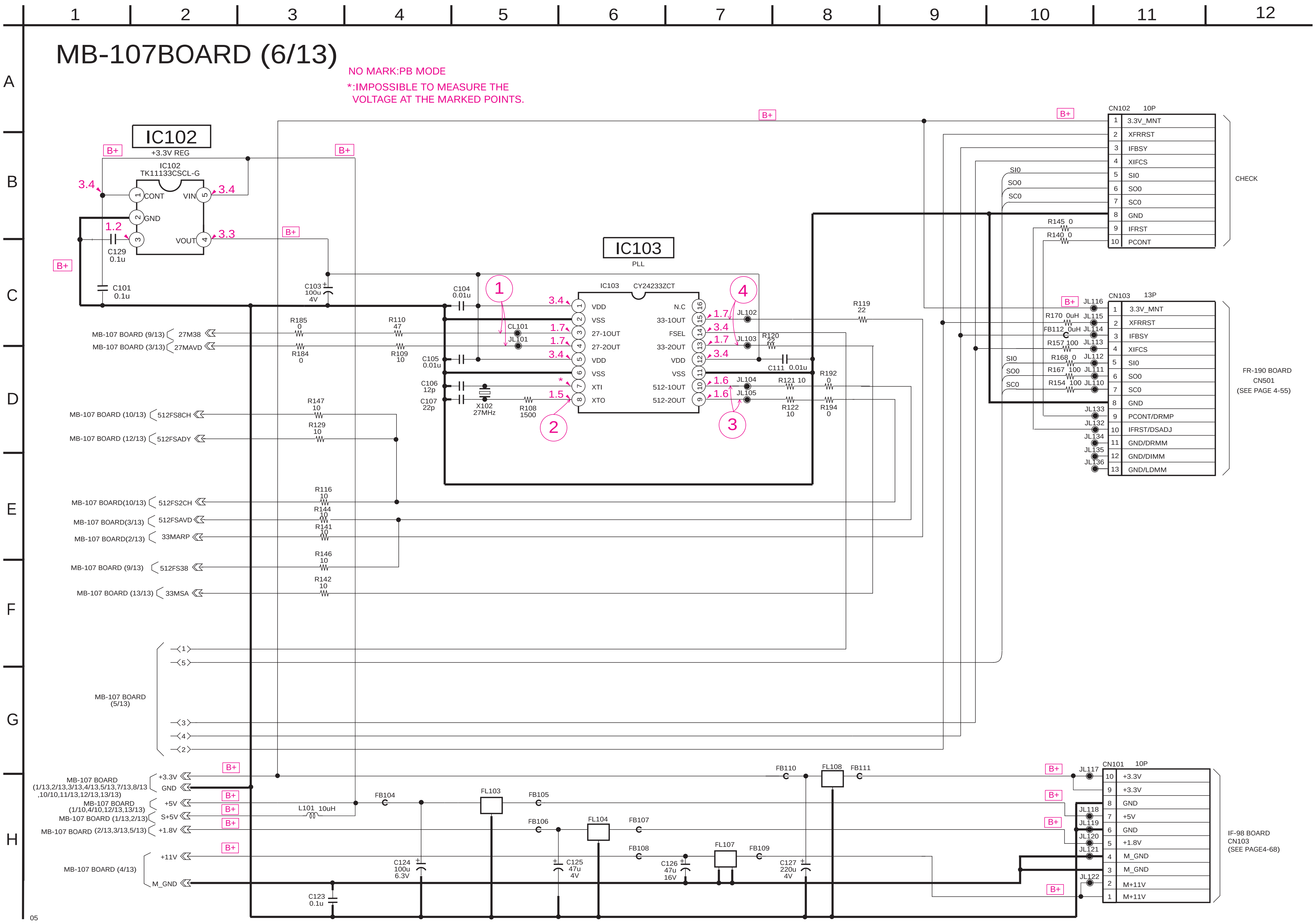
❶ IC104 (54)



1.7 Vp-p (16.5 MHz)

**MB-107 (CLOCK GENERATOR) SCHEMATIC DIAGRAM** • **See page 4-5 for printed wiring board.**

– Ref. No.: MB-107 board; 3,000 series –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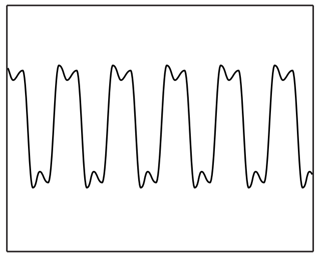
11
12
A
B
C
D
E
F
G
H
MB-107BOARD (6/13)
NO MARK:PB MODE
*:IMPOSSIBLE TO MEASURE THE VOLTAGE AT THE MARKED POINTS.
IC102
+3.3V REG
IC102
TK11133CSCL-G
CONT
GND
VIN
VOUT
3.4
3.4
1.2
3.3
C129 0.1u
C101 0.1u
C103 100u 4V
B+
IC103
PLL
IC103 CY24233ZCT
VDD
VSS
27-1OUT
27-2OUT
VDD
VSS
XTI
XTO
N.C
33-1OUT
FSEL
33-2OUT
VDD
VSS
512-1OUT
512-2OUT
C104 0.01u
C105 0.01u
C106 12p
C107 22p
X102 27MHz
R108 1500
CL101
JL101
JL102
JL103
JL104
JL105
C111 0.01u
R119 22
R120 22
R121 10
R122 10
R192 0
R194 0
R185 0
R184 0
R110 47
R109 10
R147 10
R129 10
R116 10
R144 10
R141 10
R146 10
R142 10
MB-107 BOARD (9/13) 27M38
MB-107 BOARD (3/13) 27MAVD
MB-107 BOARD (10/13) 512FS8CH
MB-107 BOARD (12/13) 512FSADY
MB-107 BOARD(10/13) 512FS2CH
MB-107 BOARD(3/13) 512FSAVD
MB-107 BOARD(2/13) 33MARP
MB-107 BOARD (9/13) 512FS38
MB-107 BOARD (13/13) 33MSA
MB-107 BOARD (5/13)
MB-107 BOARD (1/13,2/13,3/13,4/13,5/13,7/13,8/13,10/10,11/13,12/13,13/13)
+3.3V
GND
MB-107 BOARD (1/10,4/10,12/13,13/13)
+5V
MB-107 BOARD (1/13,2/13)
S+5V
MB-107 BOARD (2/13,3/13,5/13)
+1.8V
MB-107 BOARD (4/13)
+11V
M_GND
L101 10uH
FB104
FL103
FB105
FB106
FL104
FB107
FB108
FL107
FB109
FB110
FL108
FB111
C124 100u 6.3V
C125 47u 4V
C126 47u 16V
C127 220u 4V
C123 0.1u
CN102 10P
3.3V_MNT
XFRRST
IFBSY
XIFCS
SIO
SOO
SCO
GND
IFRST
PCONT
CHECK
R145 0
R140 0
CN103 13P
3.3V_MNT
XFRRST
IFBSY
XIFCS
SIO
SOO
SCO
GND
PCONT/DRMP
IFRST/DSADJ
GND/DRMM
GND/DIMM
GND/LDMM
R170 0uH
FB112 0uH
R157 100
R168 0
R167 100
R154 100
JL110
JL111
JL112
JL113
JL114
JL115
JL116
JL132
JL133
JL134
JL135
JL136
FR-190 BOARD CN501 (SEE PAGE 4-55)
CN101 10P
+3.3V
+3.3V
GND
+5V
GND
+1.8V
M_GND
M_GND
M+11V
M+11V
JL117
JL118
JL119
JL120
JL121
JL122
IF-98 BOARD CN103 (SEE PAGE4-68)
05

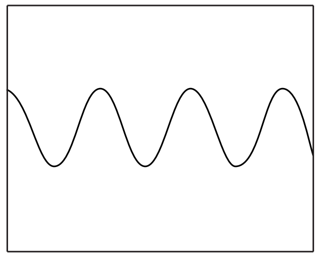
**• Waveforms**

❶ IC103 ③, ④



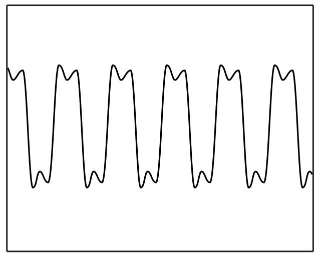
3.5 Vp-p (27 MHz)

❷ IC103 ⑧



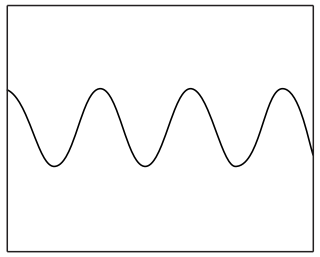
1.5 Vp-p (27 MHz)

❸ IC103 ⑨, ⑩



DVD : 3.3 Vp-p (24.57 MHz)
CD : 3.3 Vp-p (22.58 MHz)

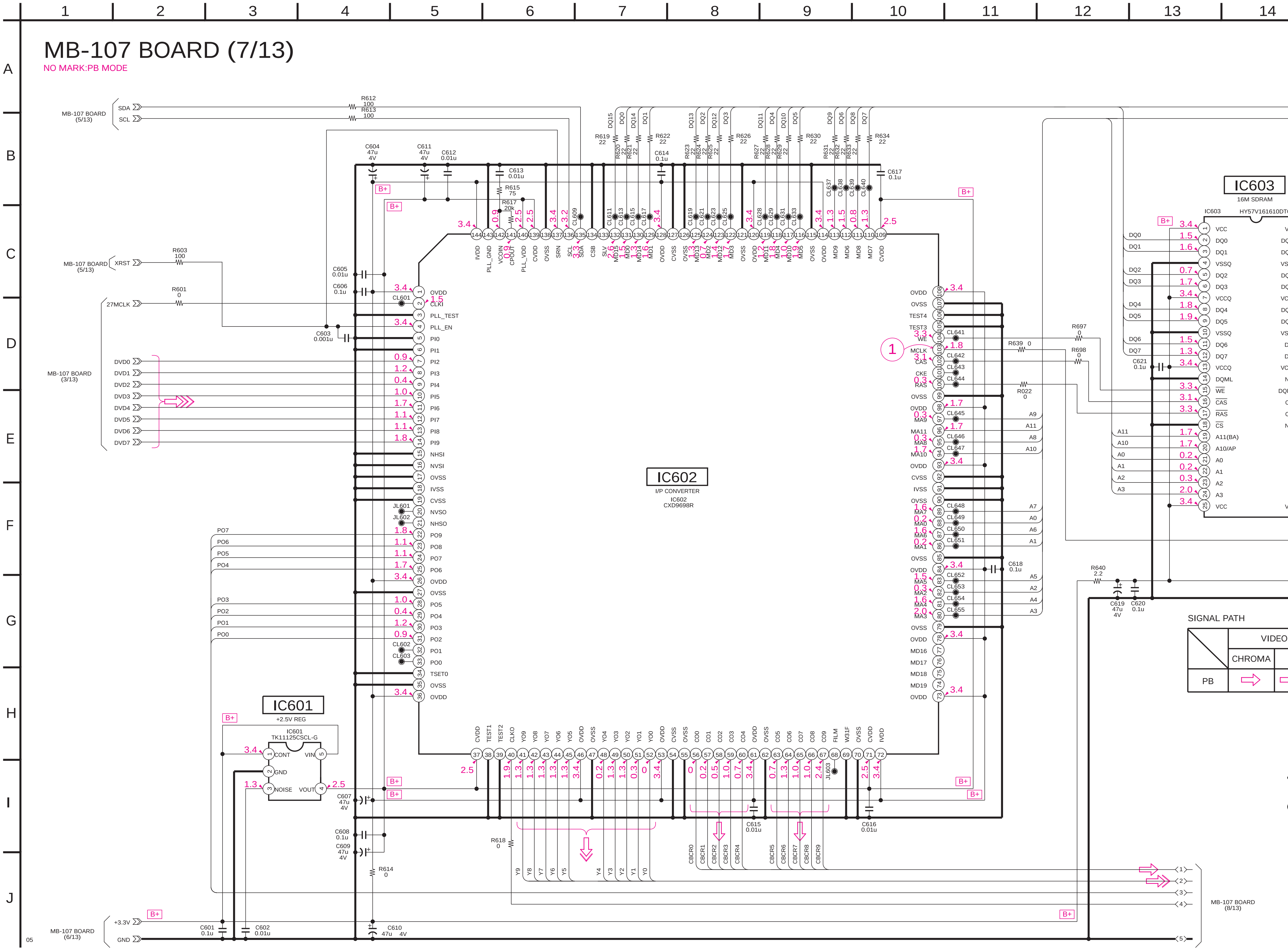
❹ IC103 ⑬, ⑮



3.2 Vp-p (33.87 MHz)

**MB-107 (I/P CONVERTER) SCHEMATIC DIAGRAM** **• See page 4-5 for printed wiring board.**

– Ref. No.: MB-107 board; 3,000 series –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A
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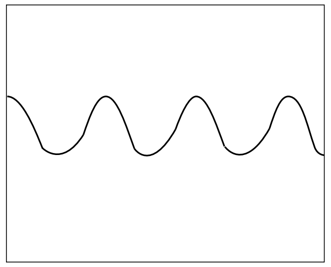
C
D
E
F
G
H
I
J
MB-107 BOARD (7/13)
NO MARK:PB MODE
MB-107 BOARD (5/13)
SDA
SCL
XRST
27MCLK
MB-107 BOARD (3/13)
DVD0
DVD1
DVD2
DVD3
DVD4
DVD5
DVD6
DVD7
PO7
PO6
PO5
PO4
PO3
PO2
PO1
PO0
IC601
+2.5V REG
IC601 TK11125CSCL-G
CONT
GND
NOISE
VIN
VOUT
IC602
I/P CONVERTER
IC602 CXD9698R
IC603
16M SDRAM
IC603 HY57V161610DTC-7TR
B+
MB-107 BOARD (6/13)
+3.3V
GND
MB-107 BOARD (8/13)
05

SIGNAL PATH

| | VIDEO SIGNAL | | |
|---|---|---|---|
| | CHROMA | Y | Y/CHROMA |
| PB | ⇨ | ⇨ | ⇨ |

**• Waveform**

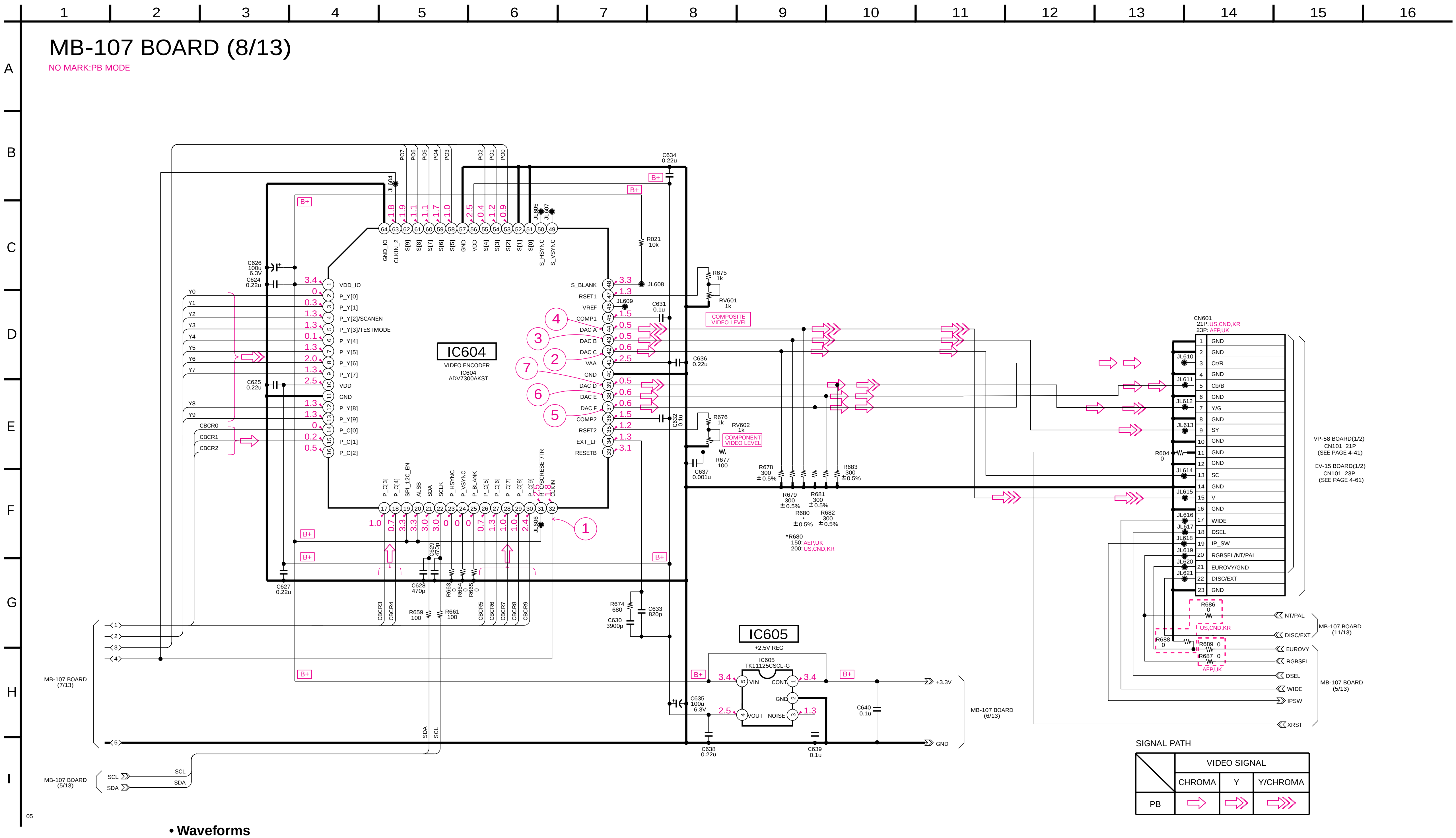
① IC602 ⑩③



1.6 Vp-p (66 MHz)

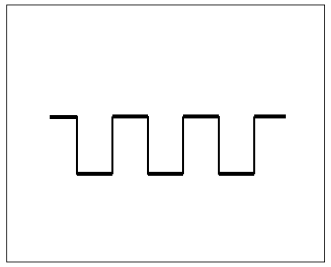
## MB-107 (VIDEO ENCODER) SCHEMATIC DIAGRAM • See page 4-5 for printed wiring board.

– Ref. No.: MB-107 board; 3,000 series –


MB-107 BOARD (8/13)
NO MARK:PB MODE
IC604
VIDEO ENCODER
IC604
ADV7300AKST
IC605
+2.5V REG
IC605
TK11125CSCL-G
VIN
CONT
GND
VOUT
NOISE
COMPOSITE VIDEO LEVEL
COMPONENT VIDEO LEVEL
CN601
21P: US,CND,KR
23P: AEP,UK
GND
Cr/R
Cb/B
Y/G
SY
SC
V
WIDE
DSEL
IP_SW
RGBSEL/NT/PAL
EUROVY/GND
DISC/EXT
VP-58 BOARD(1/2)
CN101 21P
(SEE PAGE 4-41)
EV-15 BOARD(1/2)
CN101 23P
(SEE PAGE 4-61)
NT/PAL
DISC/EXT
EUROVY
RGBSEL
DSEL
WIDE
IPSW
XRST
MB-107 BOARD (11/13)
MB-107 BOARD (5/13)
MB-107 BOARD (6/13)
MB-107 BOARD (7/13)
+3.3V
GND
SCL
SDA
*R680
150: AEP,UK
200: US,CND,KR
SIGNAL PATH
VIDEO SIGNAL
CHROMA
Y
Y/CHROMA
PB
05

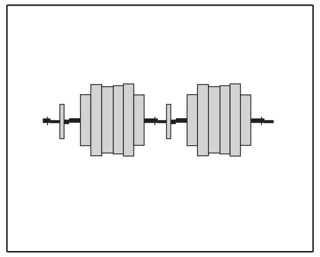
**• Waveforms**

❶ IC604 ㉜



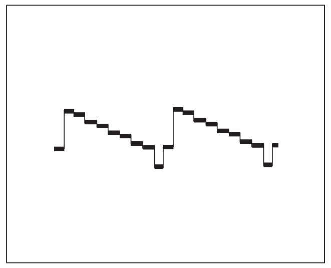
3.4 Vp-p (27 MHz)

❷ IC604 ㊷



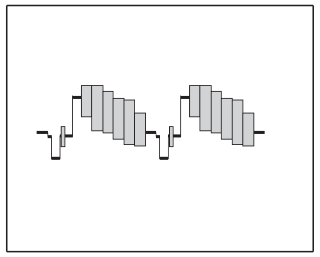
850 mVp-p (H)

❸ IC604 ㊸



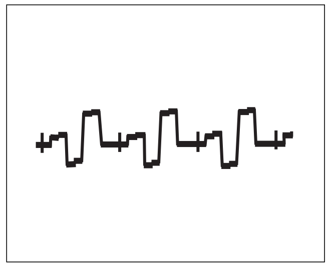
950 mVp-p (H)

❹ IC604 ㊹



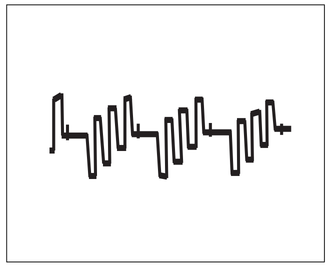
1.1 Vp-p (H)

❺ IC604 ㊲



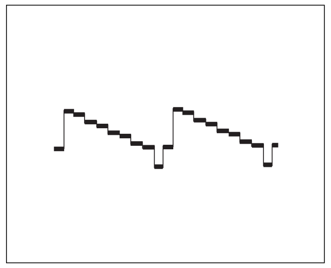
650 mVp-p (H)

❻ IC604 ㊳



650 mVp-p (H)

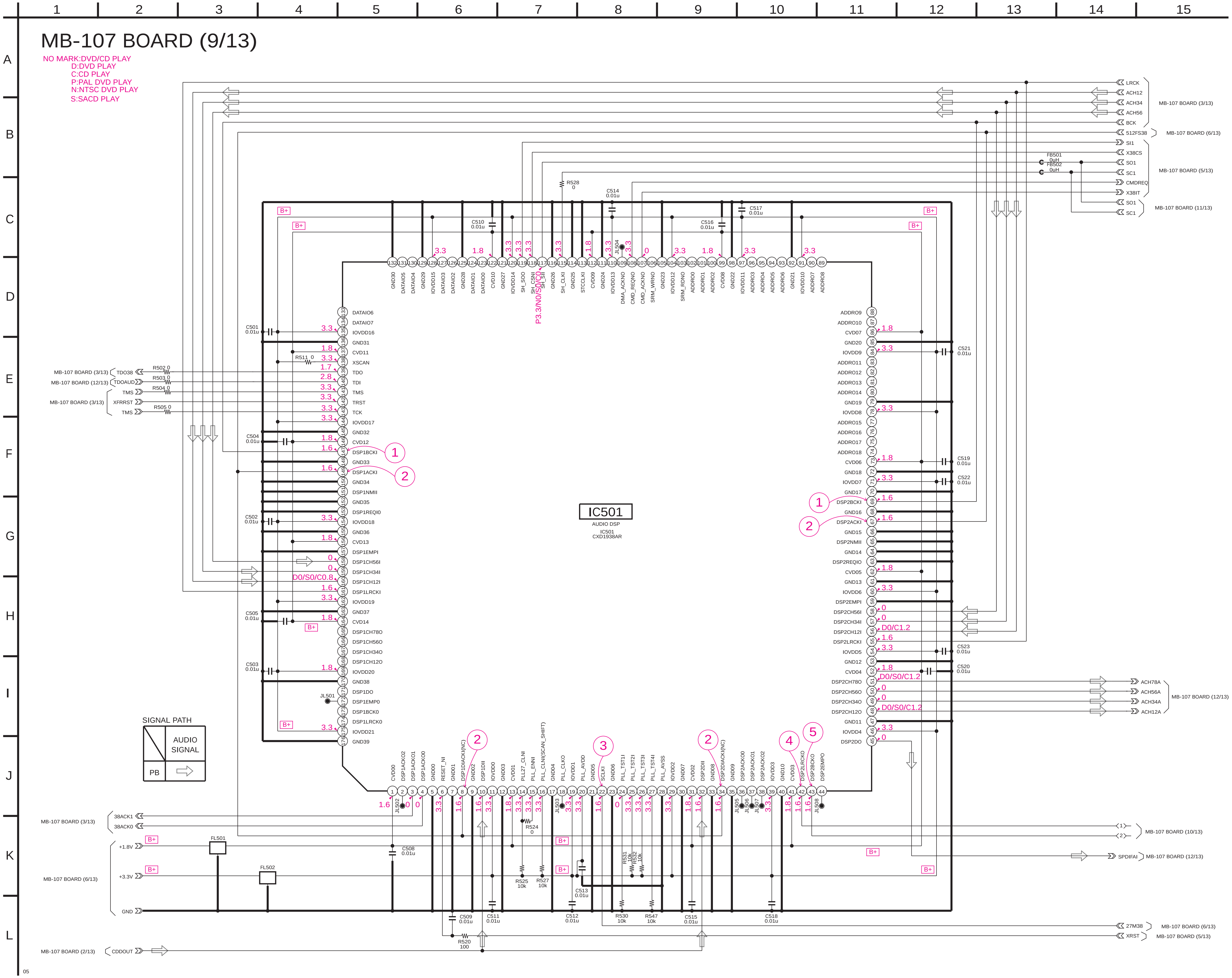
❼ IC604 ㊴



950 mVp-p (H)

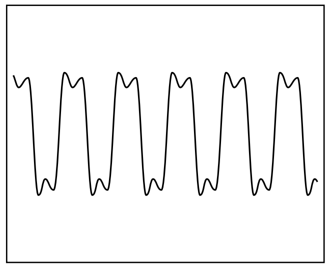
## MB-107 (AUDIO DSP) SCHEMATIC DIAGRAM • See page 4-5 for printed wiring board.

– Ref. No.: MB-107 board; 3,000 series –


MB-107 BOARD (9/13)
NO MARK:DVD/CD PLAY
D:DVD PLAY
C:CD PLAY
P:PAL DVD PLAY
N:NTSC DVD PLAY
S:SACD PLAY
IC501
AUDIO DSP
IC501
CXD1938AR
SIGNAL PATH
AUDIO SIGNAL
PB
MB-107 BOARD (3/13)
MB-107 BOARD (6/13)
MB-107 BOARD (5/13)
MB-107 BOARD (11/13)
MB-107 BOARD (12/13)
MB-107 BOARD (10/13)
MB-107 BOARD (2/13)
LRCK
ACH12
ACH34
ACH56
BCK
512FS38
SI1
X38CS
SO1
SC1
CMDREQ
X38IT
TDO38
TDOAUD
TMS
XFRRST
38ACK1
38ACK0
+1.8V
+3.3V
GND
CDDOUT
ACH78A
ACH56A
ACH34A
ACH12A
SPDIFAI
27M38
XRST
FL501
FL502
B+

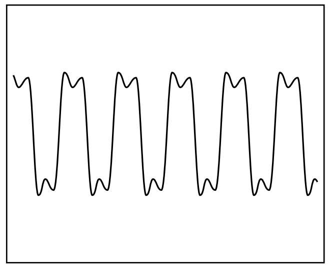
**• Waveforms**

❶ IC501 (69), (147)



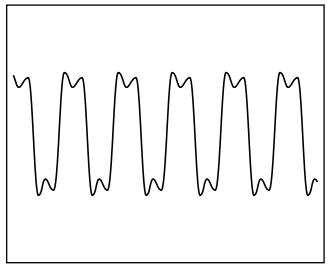
4.1 Vp-p (3.1 MHz)

❷ IC501 ⑧, ㉞, (67), (148)



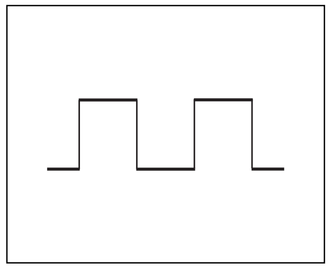
DVD: 3.3 Vp-p (24.57 MHz)
CD: 3.3 Vp-p (22.58 MHz)

❸ IC501 ㉒



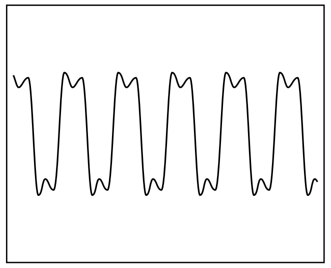
3.5 Vp-p (27 MHz)

❹ IC501 ㊷



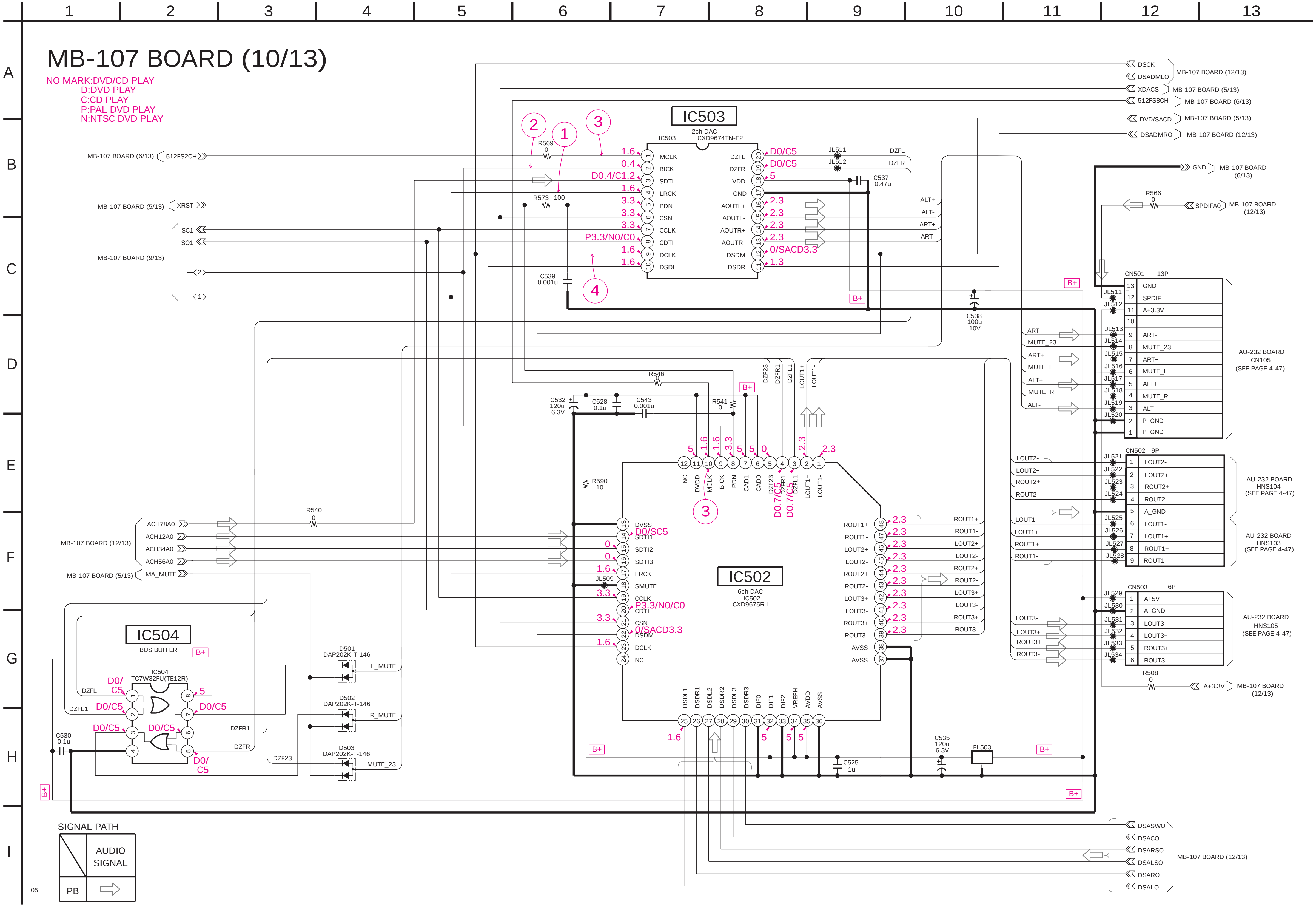
DVD: 4.3 Vp-p (48.1 kHz)
CD : 4.3 Vp-p (44.1 kHz)

❺ IC501 ㊸



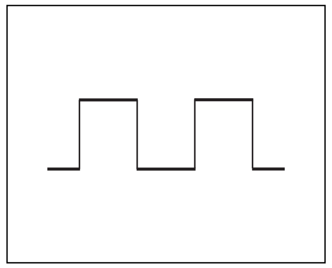
DVD: 4.4 Vp-p (3.1 MHz)
CD : 4.4 Vp-p (2.9 MHz)

**MB-107 (2ch/6ch DAC) SCHEMATIC DIAGRAM** • **See page 4-5 for printed wiring board.**
– Ref. No.: MB-107 board; 3,000 series –


MB-107 BOARD (10/13)
NO MARK:DVD/CD PLAY
D:DVD PLAY
C:CD PLAY
P:PAL DVD PLAY
N:NTSC DVD PLAY
IC503
2ch DAC
IC503 CXD9674TN-E2
IC502
6ch DAC
IC502
CXD9675R-L
IC504
BUS BUFFER
IC504
TC7W32FU(TE12R)
D501 DAP202K-T-146
D502 DAP202K-T-146
D503 DAP202K-T-146
CN501 13P
CN502 9P
CN503 6P
MB-107 BOARD (12/13)
MB-107 BOARD (5/13)
MB-107 BOARD (6/13)
MB-107 BOARD (9/13)
AU-232 BOARD CN105 (SEE PAGE 4-47)
AU-232 BOARD HNS104 (SEE PAGE 4-47)
AU-232 BOARD HNS103 (SEE PAGE 4-47)
AU-232 BOARD HNS105 (SEE PAGE 4-47)
DSCK
DSADMLO
XDACS
512FS8CH
DVD/SACD
DSADMRO
512FS2CH
XRST
SC1
SO1
GND
SPDIFAO
ACH78AO
ACH12AO
ACH34AO
ACH56AO
MA_MUTE
L_MUTE
R_MUTE
MUTE_23
A+3.3V
DSASWO
DSACO
DSARSO
DSALSO
DSARO
DSALO
SIGNAL PATH
AUDIO SIGNAL
PB
05

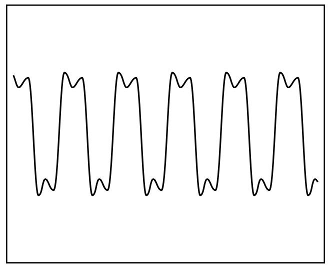
• **Waveforms**

❶ IC503 ④, IC502 ⑰



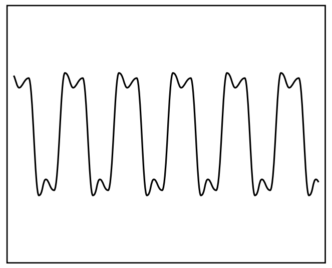
DVD: 4.3 Vp-p (48.1 kHz)
CD : 4.3 Vp-p (44.1 kHz)

❷ IC503 ②, IC502 ⑨



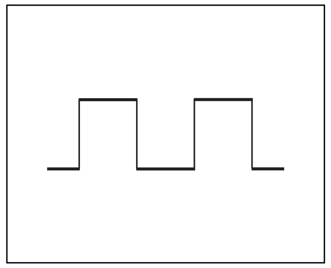
DVD: 4.4 Vp-p (3.1 MHz)
CD : 4.4 Vp-p (2.9 MHz)

❸ IC503 ①, IC502 ⑩



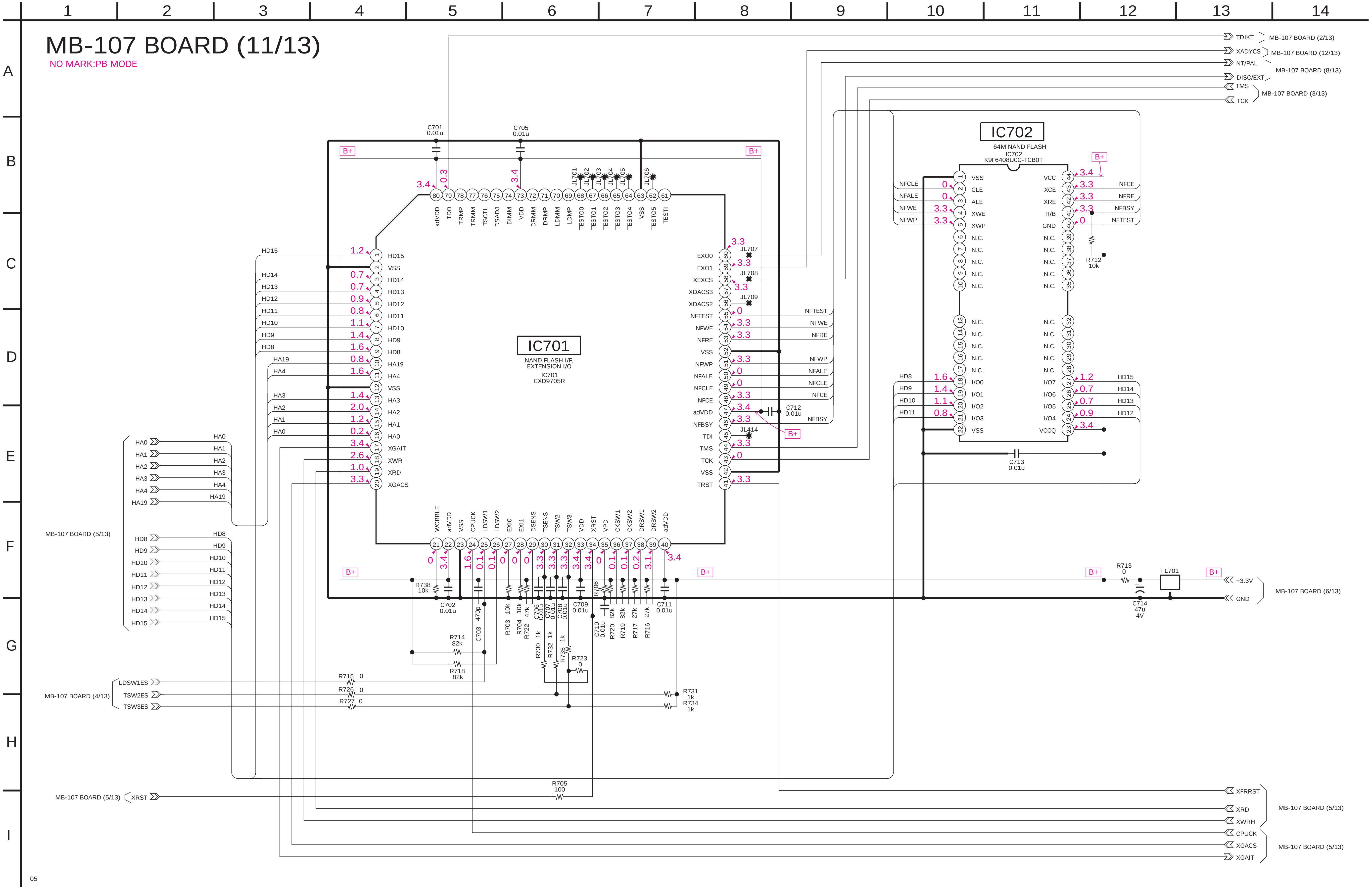
DVD: 3.3 Vp-p (24.57 MHz)
CD: 3.3 Vp-p (22.58 MHz)

❹ IC503 ⑨, IC502 ㉓



4 Vp-p (2.84 MHz)

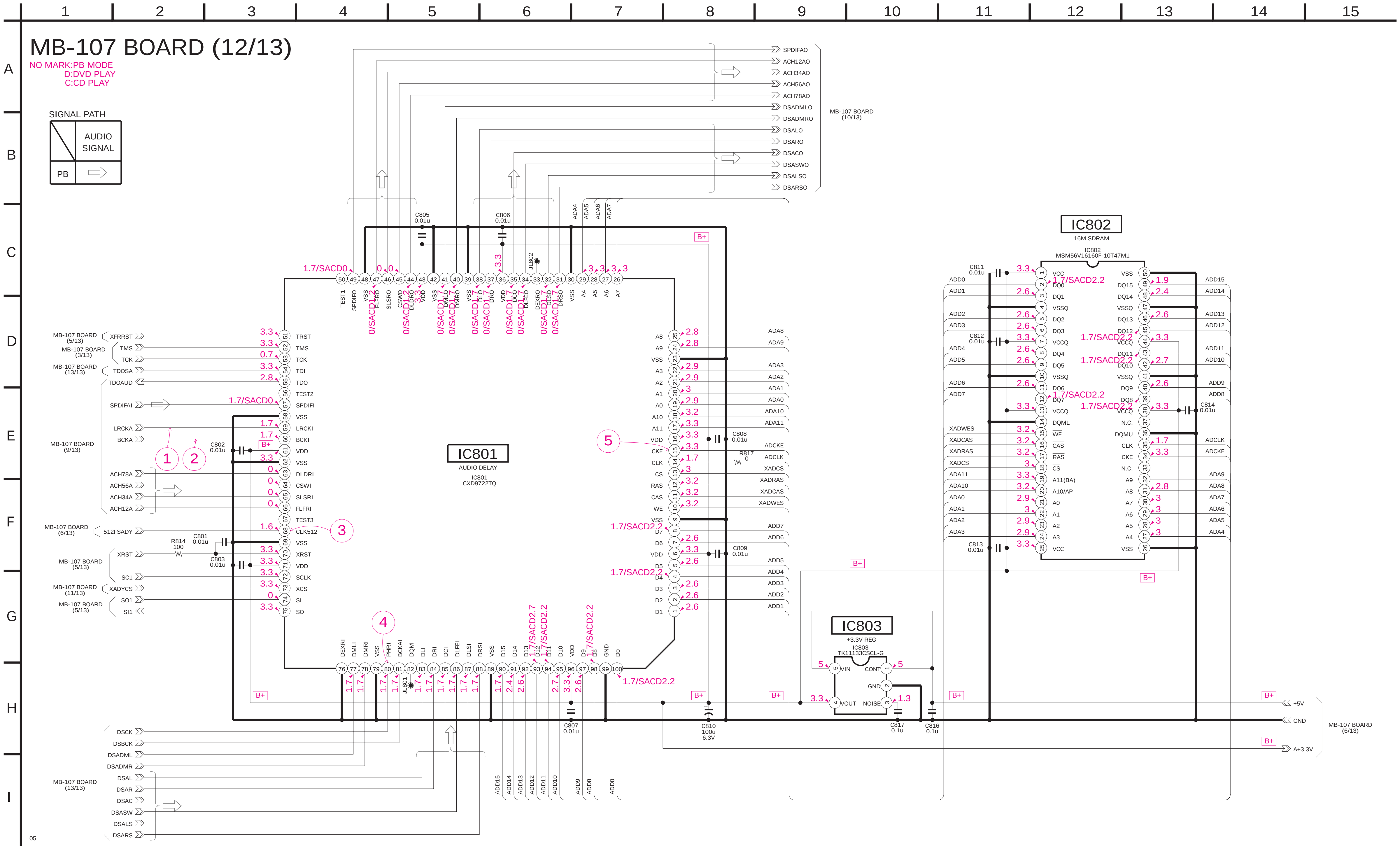
**MB-107 (NAND FLASH I/F, EXTENSION I/O) SCHEMATIC DIAGRAM • See page 4-5 for printed wiring board.**
– Ref. No.: MB-107 board; 3,000 series –


MB-107 BOARD (11/13)
NO MARK:PB MODE
IC701
NAND FLASH I/F, EXTENSION I/O
IC701
CXD9705R
IC702
64M NAND FLASH
IC702
K9F6408U0C-TCB0T
C701 0.01u
C705 0.01u
C702 0.01u
C703 470p
C706 0.01u
C707 0.01u
C708 0.01u
C709 0.01u
C710 0.01u
C711 0.01u
C712 0.01u
C713 0.01u
C714 47u 4V
R738 10k
R714 82k
R718 82k
R703 10k
R704 10k
R722 47k
R730 1k
R732 1k
R735 1k
R723 0
R706 0
R720 82k
R719 82k
R717 27k
R716 27k
R715 0
R726 0
R727 0
R731 1k
R734 1k
R705 100
R712 10k
R713 0
FL701
JL701
JL702
JL703
JL704
JL705
JL706
JL707
JL708
JL709
JL414
B+
TDIKT
XADYCS
NT/PAL
DISC/EXT
TMS
TCK
MB-107 BOARD (2/13)
MB-107 BOARD (12/13)
MB-107 BOARD (8/13)
MB-107 BOARD (3/13)
MB-107 BOARD (6/13)
+3.3V
GND
XFRRST
XRD
XWRH
CPUCK
XGACS
XGAIT
MB-107 BOARD (5/13)
MB-107 BOARD (5/13)
MB-107 BOARD (5/13)
MB-107 BOARD (4/13)
LDSW1ES
TSW2ES
TSW3ES
XRST
HA0
HA1
HA2
HA3
HA4
HA19
HD8
HD9
HD10
HD11
HD12
HD13
HD14
HD15
NFCLE
NFALE
NFWE
NFWP
NFCE
NFRE
NFBSY
NFTEST
adVDD
TDO
TRMP
TRMM
TSCTL
DSADJ
DIMM
VDD
DRMM
DRMP
LDMM
LDMP
TESTO0
TESTO1
TESTO2
TESTO3
TESTO4
VSS
TESTO5
TESTI
EXO0
EXO1
XEXCS
XDACS3
XDACS2
TDI
TRST
XGAIT
XWR
XRD
XGACS
WOBBLE
CPUCK
LDSW1
LDSW2
EXI0
EXI1
DSENS
TSENS
TSW2
TSW3
XRST
VPD
CKSW1
CKSW2
DRSW1
DRSW2
CLE
ALE
XWE
XWP
N.C.
I/O0
I/O1
I/O2
I/O3
I/O4
I/O5
I/O6
I/O7
VCC
XCE
XRE
R/B
VCCQ
05

# NAND FLASH I/F, EXTENSION I/O
## MB-107 (11/13)

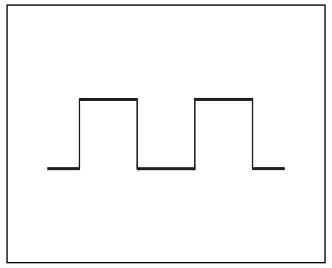
## MB-107 (AUDIO DELAY) SCHEMATIC DIAGRAM • See page 4-5 for printed wiring board.

– Ref. No.: MB-107 board; 3,000 series –


MB-107 BOARD (12/13)
NO MARK:PB MODE
D:DVD PLAY
C:CD PLAY
SIGNAL PATH
AUDIO SIGNAL
PB
IC801
AUDIO DELAY
IC801
CXD9722TQ
IC802
16M SDRAM
IC802
MSM56V16160F-10T47M1
IC803
+3.3V REG
IC803
TK11133CSCL-G
MB-107 BOARD (10/13)
MB-107 BOARD (5/13)
MB-107 BOARD (3/13)
MB-107 BOARD (13/13)
MB-107 BOARD (9/13)
MB-107 BOARD (6/13)
MB-107 BOARD (11/13)
SPDIFAO
ACH12AO
ACH34AO
ACH56AO
ACH78AO
DSADMLO
DSADMRO
DSALO
DSARO
DSACO
DSASWO
DSALSO
DSARSO
XFRRST
TMS
TCK
TDOSA
TDOAUD
SPDIFAI
LRCKA
BCKA
ACH78A
ACH56A
ACH34A
ACH12A
512FSADY
XRST
SC1
XADYCS
SO1
SI1
DSCK
DSBCK
DSADML
DSADMR
DSAL
DSAR
DSAC
DSASW
DSALS
DSARS
+5V
GND
A+3.3V
B+
C801 0.01u
C802 0.01u
C803 0.01u
C805 0.01u
C806 0.01u
C807 0.01u
C808 0.01u
C809 0.01u
C810 100u 6.3V
C811 0.01u
C812 0.01u
C813 0.01u
C814 0.01u
C816 0.1u
C817 0.1u
R814 100
R817 0
JL801
JL802
1.7/SACD0
1.7/SACD2.2
1.7/SACD2.7
05
1
2
3
4
5

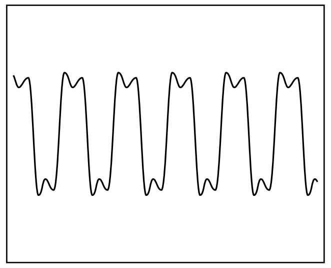
- **Waveforms**

❶ IC801 (59)



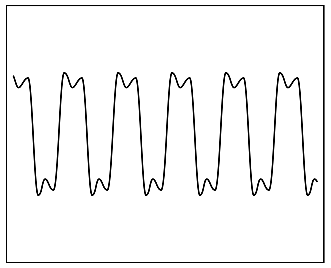
DVD: 4.3 Vp-p (48.1 kHz)
CD : 4.3 Vp-p (44.1 kHz)

❷ IC801 (60)



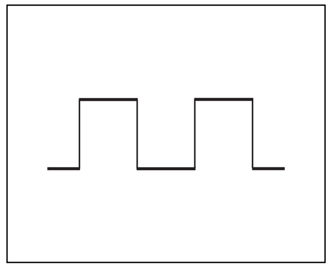
DVD: 4.4 Vp-p (3.1 MHz)
CD : 4.4 Vp-p (2.9 MHz)

❸ IC801 (68)



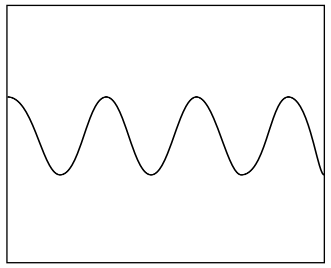
DVD: 3.3 Vp-p (24.57 kHz)
CD : 3.3 Vp-p (22.581 kHz)

❹ IC801 (80)



4 Vp-p (2.84 MHz)

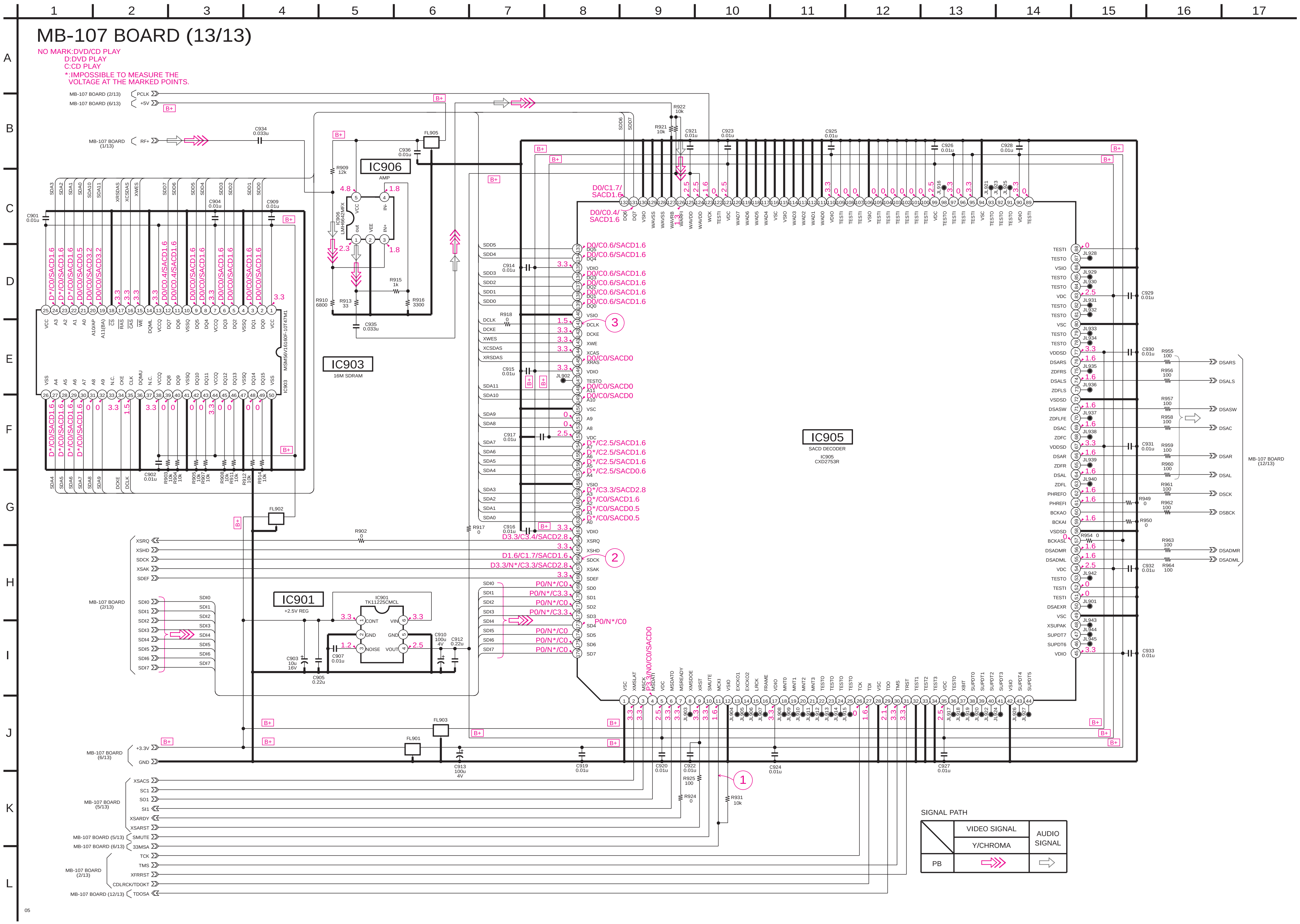
❺ IC801 ⑮



4.9 Vp-p (33.78 MHz)

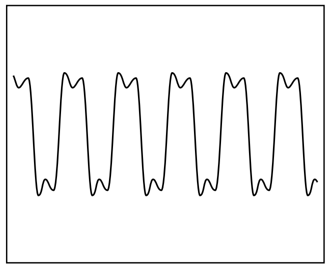
## MB-107 (SACD DECODER) SCHEMATIC DIAGRAM • See page 4-5 for printed wiring board.

– Ref. No.: MB-107 board; 3,000 series –


MB-107 BOARD (13/13)
NO MARK:DVD/CD PLAY
D:DVD PLAY
C:CD PLAY
*:IMPOSSIBLE TO MEASURE THE VOLTAGE AT THE MARKED POINTS.
IC906 AMP
IC903 16M SDRAM
IC901 +2.5V REG
IC905 SACD DECODER IC905 CXD2753R
SIGNAL PATH
VIDEO SIGNAL
Y/CHROMA
AUDIO SIGNAL
PB
05

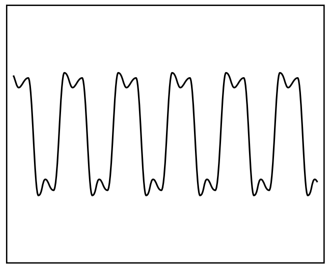
**• Waveforms**

❶ IC905 ⑪



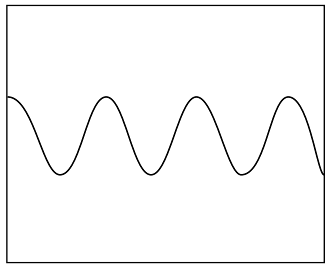
DVD: 3.3 Vp-p (24.57 MHz)
CD: 3.3 Vp-p (22.58 MHz)

❷ IC905 (166)



4.5 Vp-p (4.2 MHz)

❸ IC905 (141)



4.9 Vp-p (33.78 MHz)

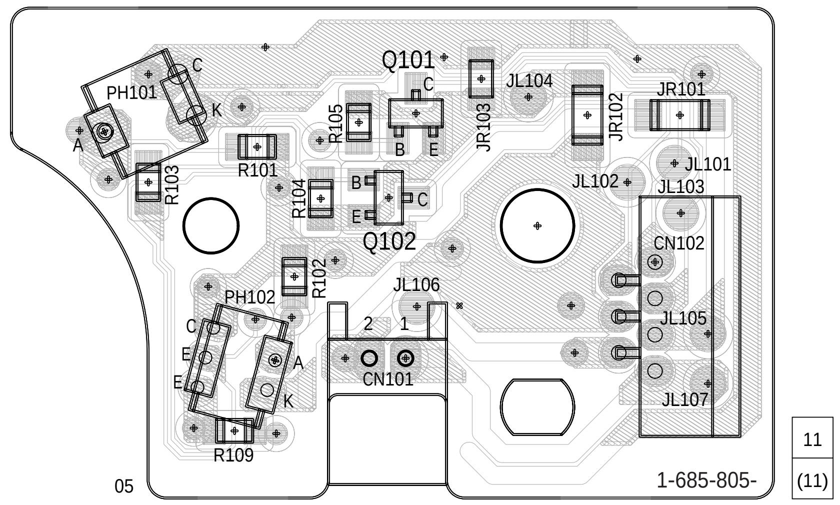
## MS-113 (LOADING MOTOR), CK-119 (SENSOR) PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAM

– Ref. No.: MS-113 board; 4,000 series, CK-119 board; 2,000 series –

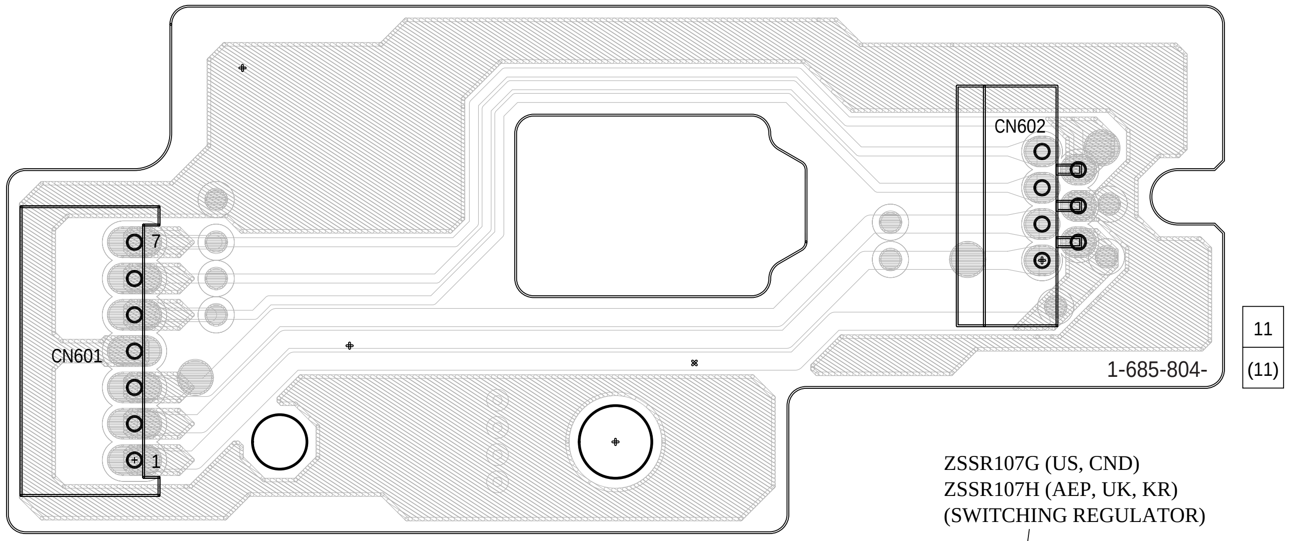
There are a few cases that the part isn't mounted in this model is printed on this diagram.

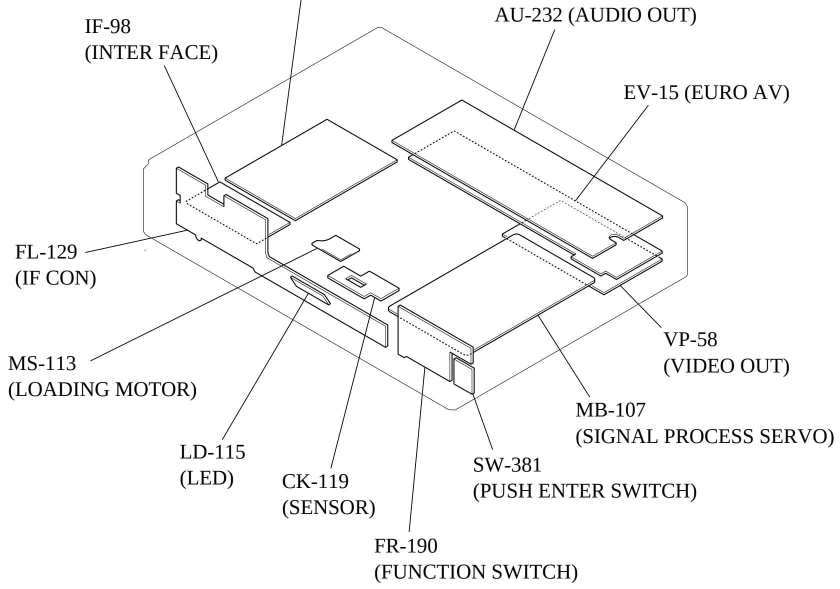
: Uses unleaded solder.

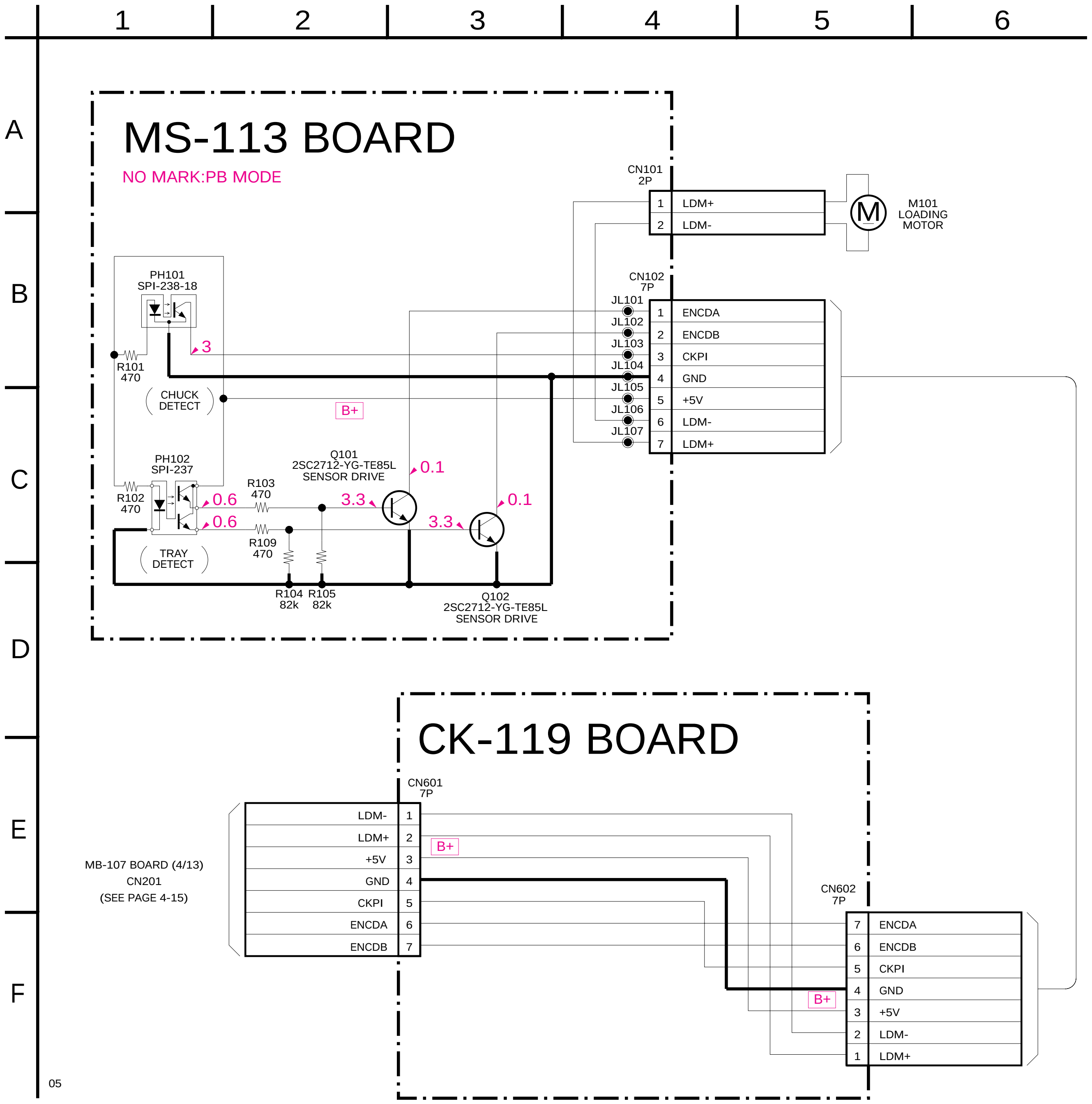
MS-113 BOARD


PH101
C
K
A
Q101
C
B
E
R105
JR103
JL104
JR102
JR101
JL101
JL102
JL103
R101
R103
R104
B
C
E
Q102
R102
CN102
JL106
PH102
C
E
E
A
K
2
1
CN101
JL105
JL107
R109
05
1-685-805-
11
(11)

CK-119 BOARD


CN602
7
CN601
1
1-685-804-
11
(11)


ZSSR107G (US, CND)
ZSSR107H (AEP, UK, KR)
(SWITCHING REGULATOR)
IF-98
(INTER FACE)
AU-232 (AUDIO OUT)
EV-15 (EURO AV)
FL-129
(IF CON)
VP-58
(VIDEO OUT)
MS-113
(LOADING MOTOR)
MB-107
(SIGNAL PROCESS SERVO)
LD-115
(LED)
CK-119
(SENSOR)
SW-381
(PUSH ENTER SWITCH)
FR-190
(FUNCTION SWITCH)


1
2
3
4
5
6
A
B
C
D
E
F
MS-113 BOARD
NO MARK:PB MODE
CN101
2P
1 LDM+
2 LDM-
M
M101
LOADING
MOTOR
PH101
SPI-238-18
3
R101
470
CHUCK
DETECT
B+
CN102
7P
JL101
JL102
JL103
JL104
JL105
JL106
JL107
1 ENCDA
2 ENCDB
3 CKPI
4 GND
5 +5V
6 LDM-
7 LDM+
PH102
SPI-237
R102
470
0.6
0.6
R103
470
R109
470
Q101
2SC2712-YG-TE85L
SENSOR DRIVE
0.1
3.3
3.3
0.1
TRAY
DETECT
R104
82k
R105
82k
Q102
2SC2712-YG-TE85L
SENSOR DRIVE
CK-119 BOARD
CN601
7P
LDM- 1
LDM+ 2
+5V 3
GND 4
CKPI 5
ENCDA 6
ENCDB 7
B+
MB-107 BOARD (4/13)
CN201
(SEE PAGE 4-15)
CN602
7P
7 ENCDA
6 ENCDB
5 CKPI
4 GND
3 +5V
2 LDM-
1 LDM+
B+
05

There are a few cases that the part isn't mounted in this model is printed on this diagram.

## VP-58 (VIDEO OUT) PRINTED WIRING BOARD

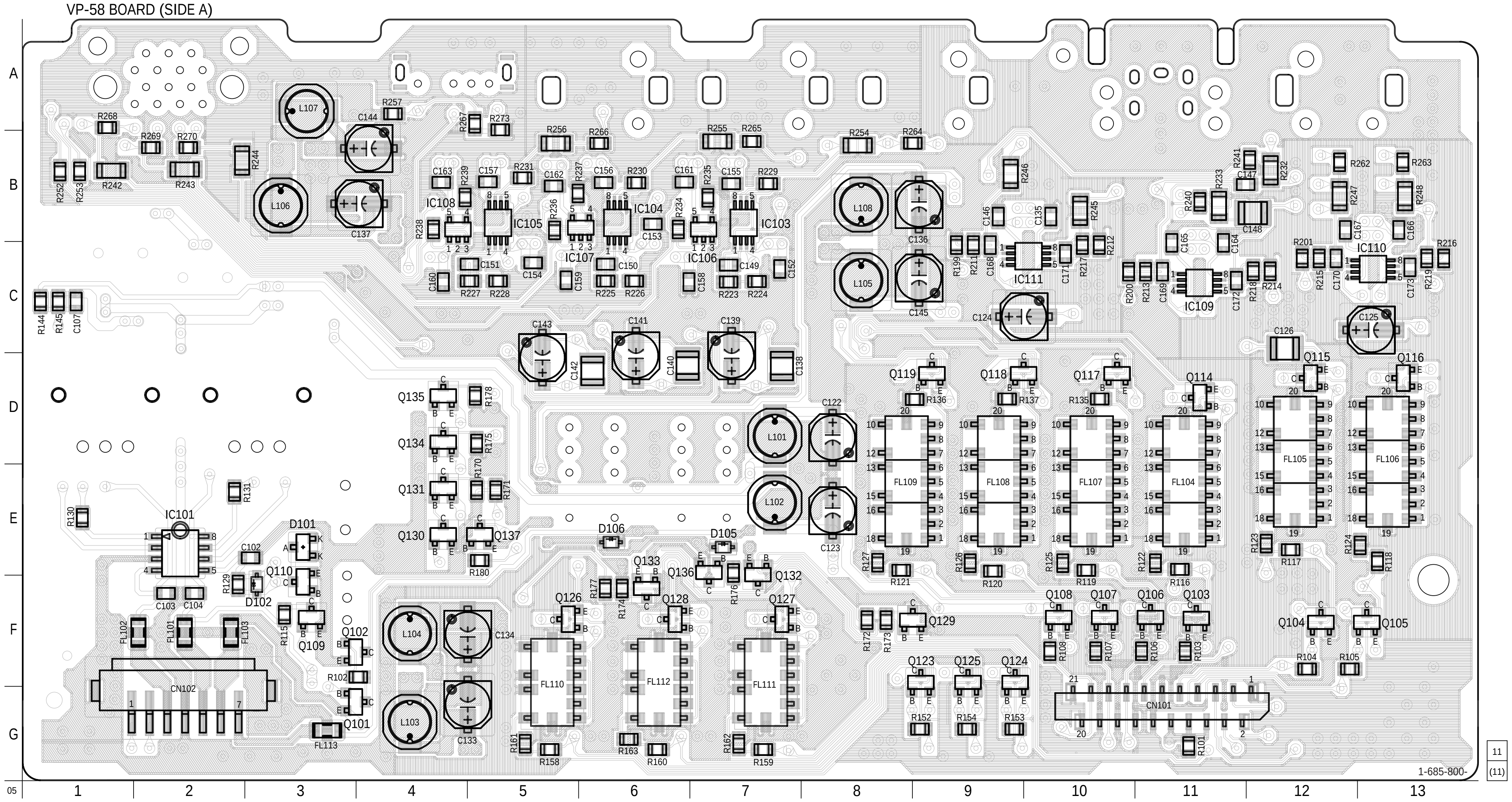
– Ref. No.: VP-58 board; 5,000 series –

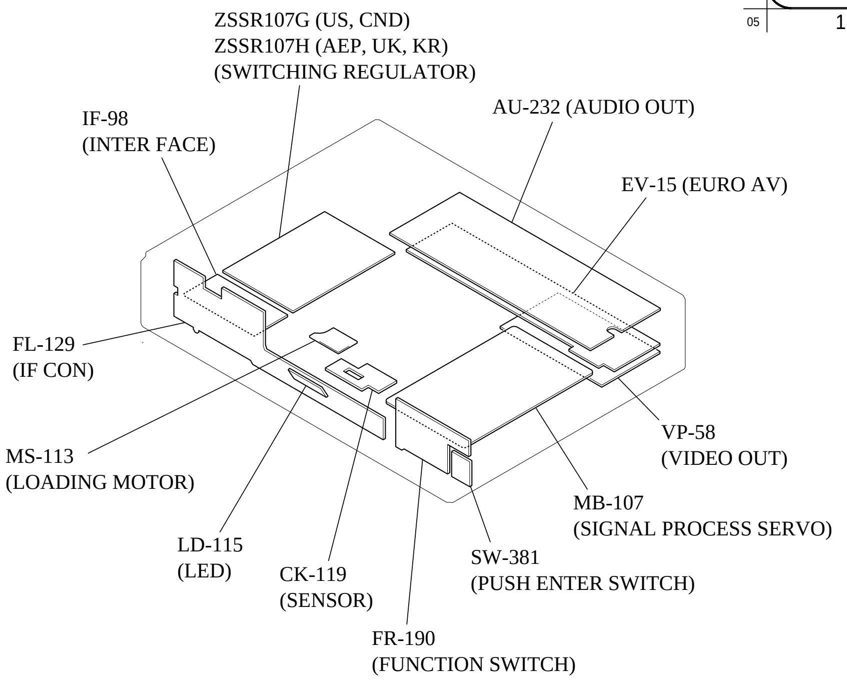
**– US, CND, KR –**

LF : Uses unleaded solder.

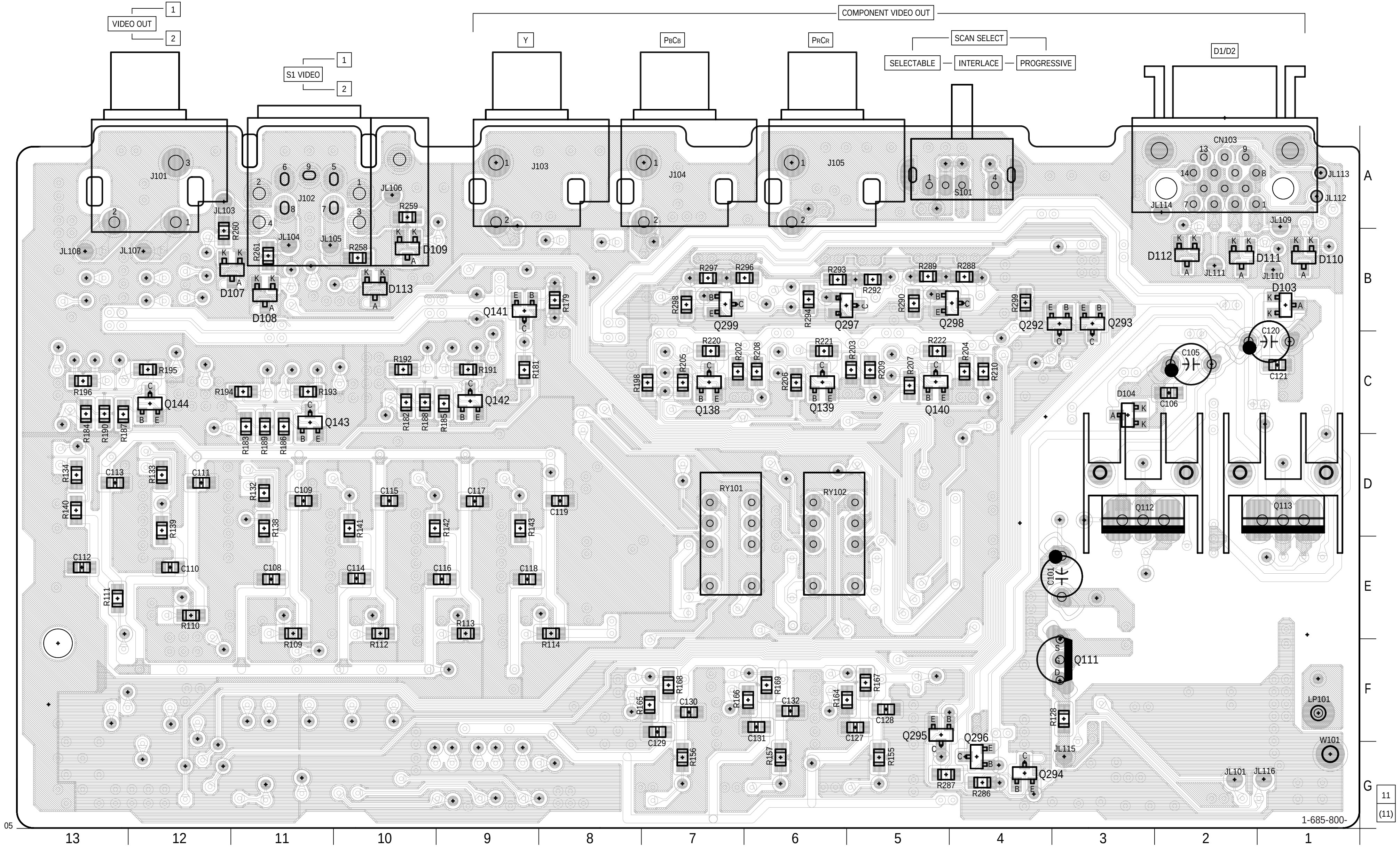
VP-58 BOARD (SIDE A)

| | |
|---|---|
| CN101 | G-11 |
| CN102 | G-2 |
| | |
| D101 | E-3 |
| D105 | E-7 |
| D106 | E-5 |
| | |
| IC101 | E-2 |
| IC103 | B-7 |
| IC104 | B-6 |
| IC105 | B-5 |
| IC109 | C-11 |
| IC110 | C-13 |
| IC111 | C-10 |
| | |
| Q101 | G-3 |
| Q102 | F-3 |
| Q103 | F-11 |
| Q104 | F-12 |
| Q105 | F-13 |
| Q106 | F-11 |
| Q107 | F-10 |
| Q108 | F-10 |
| Q109 | F-3 |
| Q110 | F-3 |
| Q114 | D-11 |
| Q115 | D-12 |
| Q116 | D-13 |
| Q117 | D-10 |
| Q118 | D-9 |
| Q119 | D-9 |
| Q123 | F-9 |
| Q124 | F-9 |
| Q125 | F-9 |
| Q126 | F-5 |
| Q127 | F-7 |
| Q128 | F-6 |
| Q129 | F-9 |
| Q130 | E-4 |
| Q132 | E-7 |
| Q134 | D-4 |
| Q135 | D-4 |
| Q136 | E-6 |
| Q137 | E-5 |


VP-58 BOARD (SIDE A)
A
B
C
D
E
F
G
05
1
2
3
4
5
6
7
8
9
10
11
12
13
11
(11)
1-685-800-
CN101
CN102
FL113
FL101
FL102
FL103
FL104
FL105
FL106
FL107
FL108
FL109
FL110
FL111
FL112
IC101
IC103
IC104
IC105
IC106
IC107
IC108
IC109
IC110
IC111
D101
D102
D105
D106
L101
L102
L103
L104
L105
L106
L107
L108
Q101
Q102
Q103
Q104
Q105
Q106
Q107
Q108
Q109
Q110
Q114
Q115
Q116
Q117
Q118
Q119
Q123
Q124
Q125
Q126
Q127
Q128
Q129
Q130
Q131
Q132
Q133
Q134
Q135
Q136
Q137


ZSSR107G (US, CND)
ZSSR107H (AEP, UK, KR)
(SWITCHING REGULATOR)
IF-98
(INTER FACE)
AU-232 (AUDIO OUT)
EV-15 (EURO AV)
FL-129
(IF CON)
MS-113
(LOADING MOTOR)
VP-58
(VIDEO OUT)
MB-107
(SIGNAL PROCESS SERVO)
LD-115
(LED)
CK-119
(SENSOR)
SW-381
(PUSH ENTER SWITCH)
FR-190
(FUNCTION SWITCH)

VP-58 BOARD (SIDE B)


VIDEO OUT
1
2
S1 VIDEO
COMPONENT VIDEO OUT
Y
PB/CB
PR/CR
SCAN SELECT
SELECTABLE
INTERLACE
PROGRESSIVE
D1/D2
J101
J102
J103
J104
J105
S101
CN103
JL103
JL104
JL105
JL106
JL107
JL108
JL109
JL110
JL111
JL112
JL113
JL114
JL101
JL115
JL116
D107
D108
D109
D113
D112
D111
D110
D103
D104
Q141
Q142
Q143
Q144
Q138
Q139
Q140
Q297
Q298
Q299
Q292
Q293
Q294
Q295
Q296
Q111
Q112
Q113
RY101
RY102
C101
C105
C106
C120
C121
LP101
W101
A
B
C
D
E
F
G
13
12
11
10
9
8
7
6
5
4
3
2
1
11
(11)
1-685-800-
05

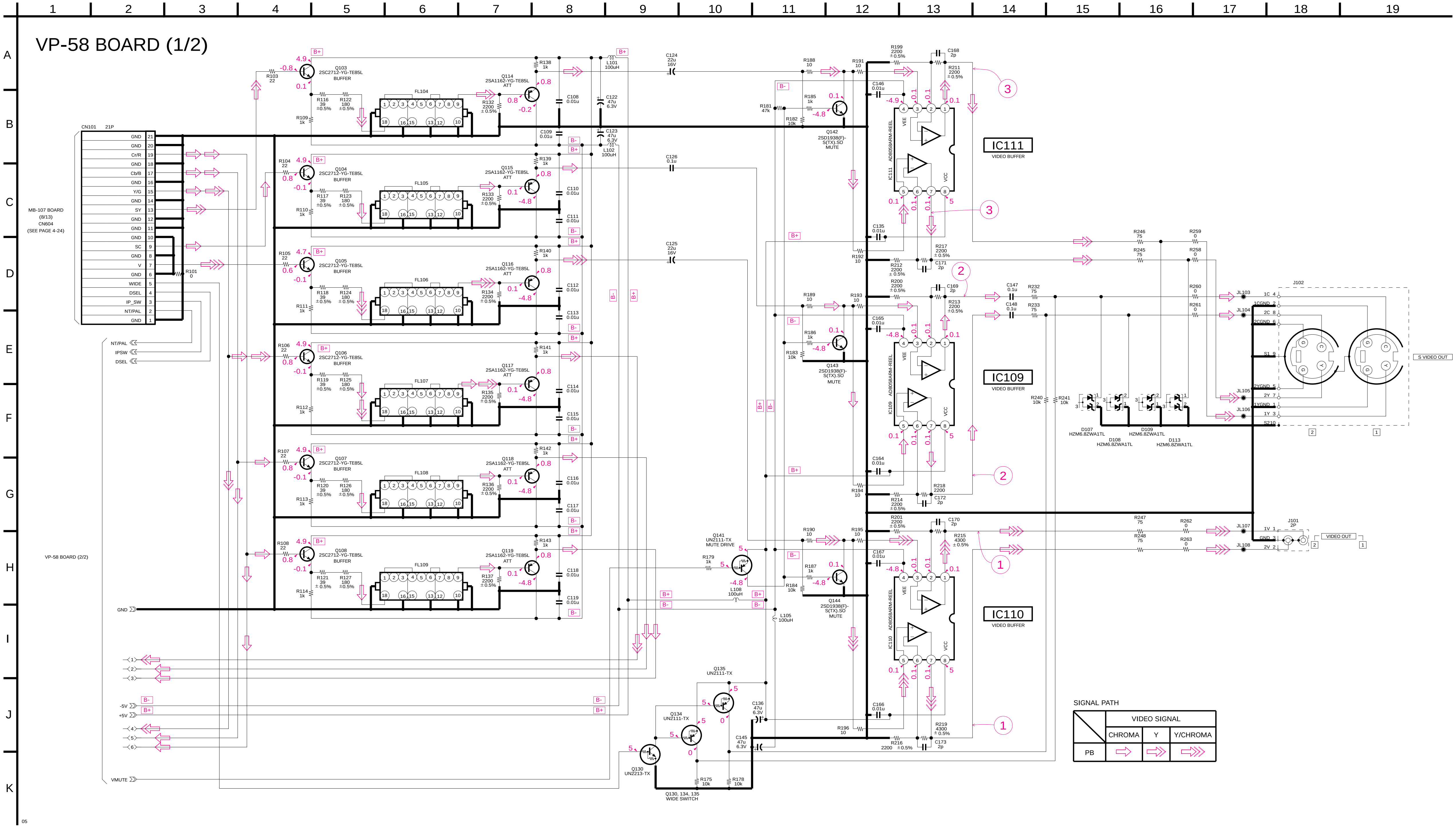
VP-58 BOARD (SIDE B)

| | |
|---|---|
| D107 | B-12 |
| D108 | B-11 |
| D109 | B-10 |
| D113 | B-10 |
| | |
| Q111 | F-3 |
| Q112 | D-3 |
| Q113 | D-1 |
| Q138 | C-7 |
| Q139 | C-6 |
| Q140 | C-5 |
| Q141 | B-9 |
| Q142 | C-9 |
| Q143 | C-11 |
| Q144 | C-12 |

## VP-58 (VIDEO BUFFER) SCHEMATIC DIAGRAM • See page 4-37 for printed wiring board.

– Ref. No.: VP-58 board; 5,000 series –

**– US, CND, KR –**

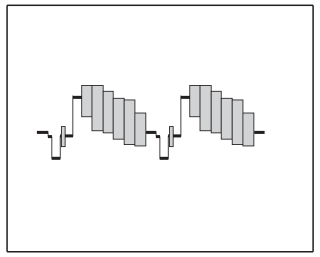

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
A
B
C
D
E
F
G
H
I
J
K
VP-58 BOARD (1/2)
CN101 21P
GND
Cr/R
Cb/B
Y/G
SY
SC
V
WIDE
DSEL
IP_SW
NT/PAL
MB-107 BOARD (8/13) CN604 (SEE PAGE 4-24)
R101 0
NT/PAL
IPSW
DSEL
VP-58 BOARD (2/2)
GND
-5V
+5V
VMUTE
Q103 2SC2712-YG-TE85L BUFFER
Q104 2SC2712-YG-TE85L BUFFER
Q105 2SC2712-YG-TE85L BUFFER
Q106 2SC2712-YG-TE85L BUFFER
Q107 2SC2712-YG-TE85L BUFFER
Q108 2SC2712-YG-TE85L BUFFER
Q114 2SA1162-YG-TE85L ATT
Q115 2SA1162-YG-TE85L ATT
Q116 2SA1162-YG-TE85L ATT
Q117 2SA1162-YG-TE85L ATT
Q118 2SA1162-YG-TE85L ATT
Q119 2SA1162-YG-TE85L ATT
FL104
FL105
FL106
FL107
FL108
FL109
L101 100uH
L102 100uH
C122 47u 6.3V
C123 47u 6.3V
C124 22u 16V
C125 22u 16V
C126 0.1u
Q142 2SD1938(F)-S(TX).SO MUTE
Q143 2SD1938(F)-S(TX).SO MUTE
Q144 2SD1938(F)-S(TX).SO MUTE
Q141 UN2111-TX MUTE DRIVE
L108 100uH
L105 100uH
Q135 UN2111-TX
Q134 UN2111-TX
Q130 UN2213-TX
Q130, 134, 135 WIDE SWITCH
C136 47u 6.3V
C145 47u 6.3V
IC111 VIDEO BUFFER
IC109 VIDEO BUFFER
IC110 VIDEO BUFFER
IC111 AD8056ARM-REEL
IC109 AD8056ARM-REEL
IC110 AD8056ARM-REEL
VEE
VCC
D107 HZM6.8ZWA1TL
D108 HZM6.8ZWA1TL
D109 HZM6.8ZWA1TL
D113 HZM6.8ZWA1TL
J102
S VIDEO OUT
J101 2P
VIDEO OUT
JL103
JL104
JL105
JL106
JL107
JL108
B+
B-
05

SIGNAL PATH

| | VIDEO SIGNAL | | |
|---|---|---|---|
| | CHROMA | Y | Y/CHROMA |
| PB | ⇨ | ⇨ | ⇨ |

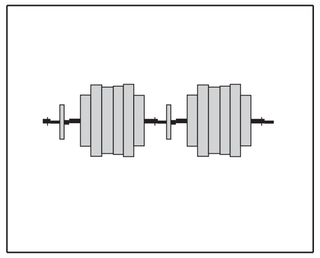
**• Waveforms**

❶ IC110 ①, ⑦



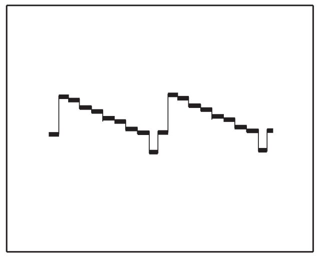
2.4 Vp-p (H)

❷ IC109 ①, ⑦



1.8 Vp-p (H)

❸ IC111 ①, ⑦

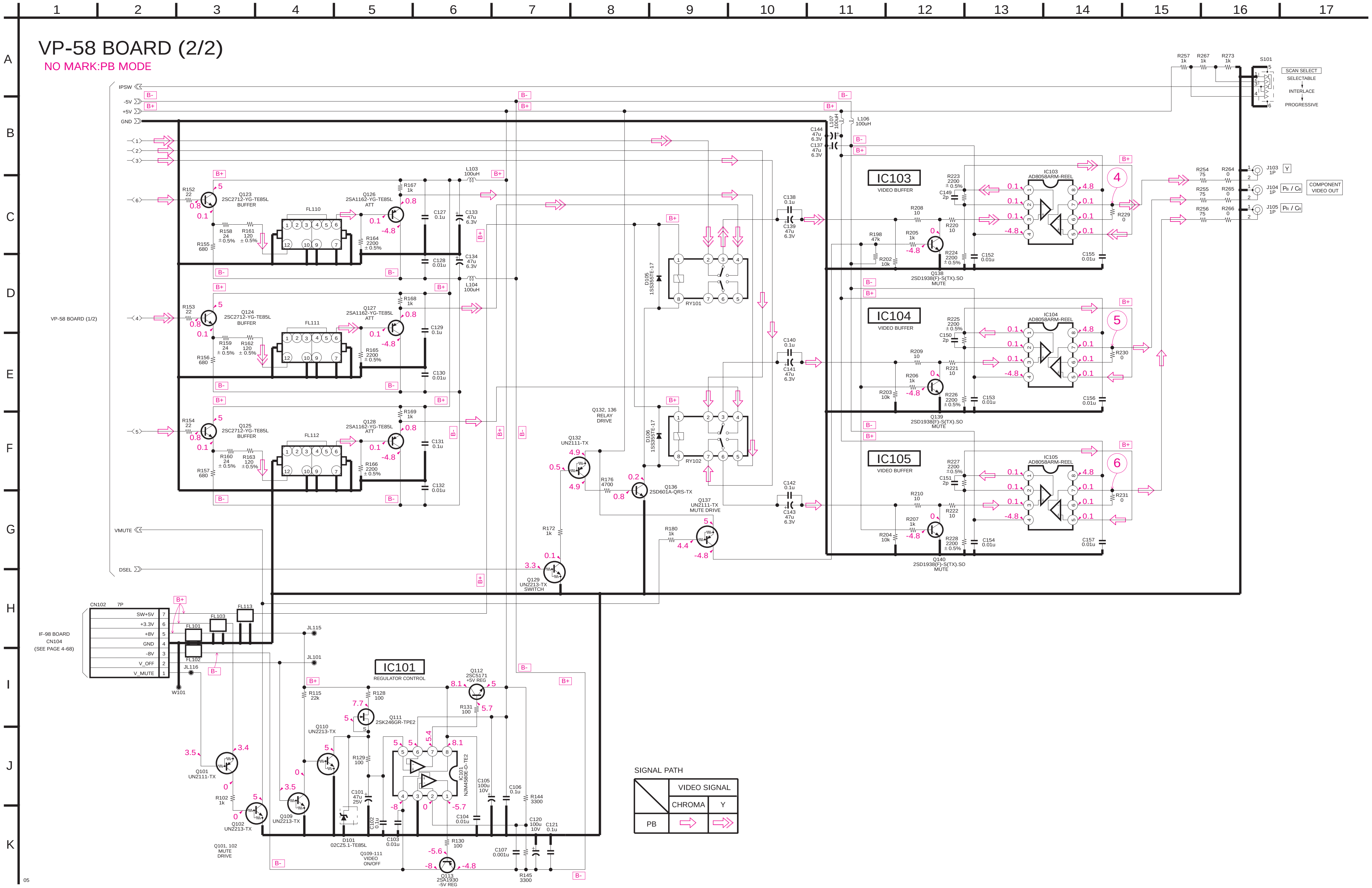


2.0 Vp-p (H)

## VP-58 (VIDEO AMP) SCHEMATIC DIAGRAM • See page 4-37 for printed wiring board.

– Ref. No.: VP-58 board; 5,000 series –

**– US, CND, KR –**


1
2
3
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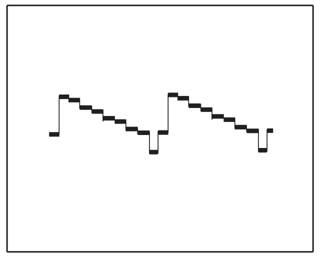
5
6
7
8
9
10
11
12
13
14
15
16
17
A
B
C
D
E
F
G
H
I
J
K
VP-58 BOARD (2/2)
NO MARK:PB MODE
IPSW
-5V
+5V
GND
VP-58 BOARD (1/2)
VMUTE
DSEL
IF-98 BOARD CN104 (SEE PAGE 4-68)
CN102 7P
SW+5V
+3.3V
+8V
GND
-8V
V_OFF
V_MUTE
Q123 2SC2712-YG-TE85L BUFFER
Q124 2SC2712-YG-TE85L BUFFER
Q125 2SC2712-YG-TE85L BUFFER
Q126 2SA1162-YG-TE85L ATT
Q127 2SA1162-YG-TE85L ATT
Q128 2SA1162-YG-TE85L ATT
FL110
FL111
FL112
L103 100uH
L104 100uH
RY101
RY102
D105 1SS357E-17
D106 1SS357E-17
Q132, 136 RELAY DRIVE
Q132 UN2111-TX
Q136 2SD601A-QRS-TX
Q137 UN2111-TX MUTE DRIVE
Q129 UN2213-TX SWITCH
IC103 VIDEO BUFFER
IC103 AD8058ARM-REEL
IC104 VIDEO BUFFER
IC104 AD8058ARM-REEL
IC105 VIDEO BUFFER
IC105 AD8058ARM-REEL
Q138 2SD1938(F)-S(TX).SO MUTE
Q139 2SD1938(F)-S(TX).SO MUTE
Q140 2SD1938(F)-S(TX).SO MUTE
L106 100uH
S101
SCAN SELECT
SELECTABLE
INTERLACE
PROGRESSIVE
J103 1P Y
J104 1P PB / CB
J105 1P PR / CR
COMPONENT VIDEO OUT
IC101 REGULATOR CONTROL
IC102 NJM4580E-D-TE2
Q101 UN2111-TX
Q102 UN2213-TX
Q101, 102 MUTE DRIVE
Q109 UN2213-TX
Q110 UN2213-TX
Q109-111 VIDEO ON/OFF
Q111 2SK246GR-TPE2
Q112 2SC5171 +5V REG
Q113 2SA1930 -5V REG
D101 02CZ5.1-TE85L
W101
05

SIGNAL PATH

| | VIDEO SIGNAL | |
|---|---|---|
| | CHROMA | Y |
| PB | ⇨ | ⇨ |

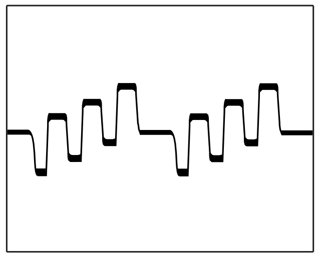
**• Waveforms**

④ IC103 ⑦



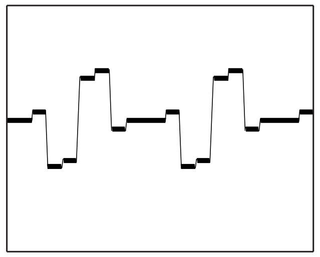
2.0 Vp-p (H)

⑤ IC104 ⑦



1.3 Vp-p (H)

⑥ IC105 ⑦



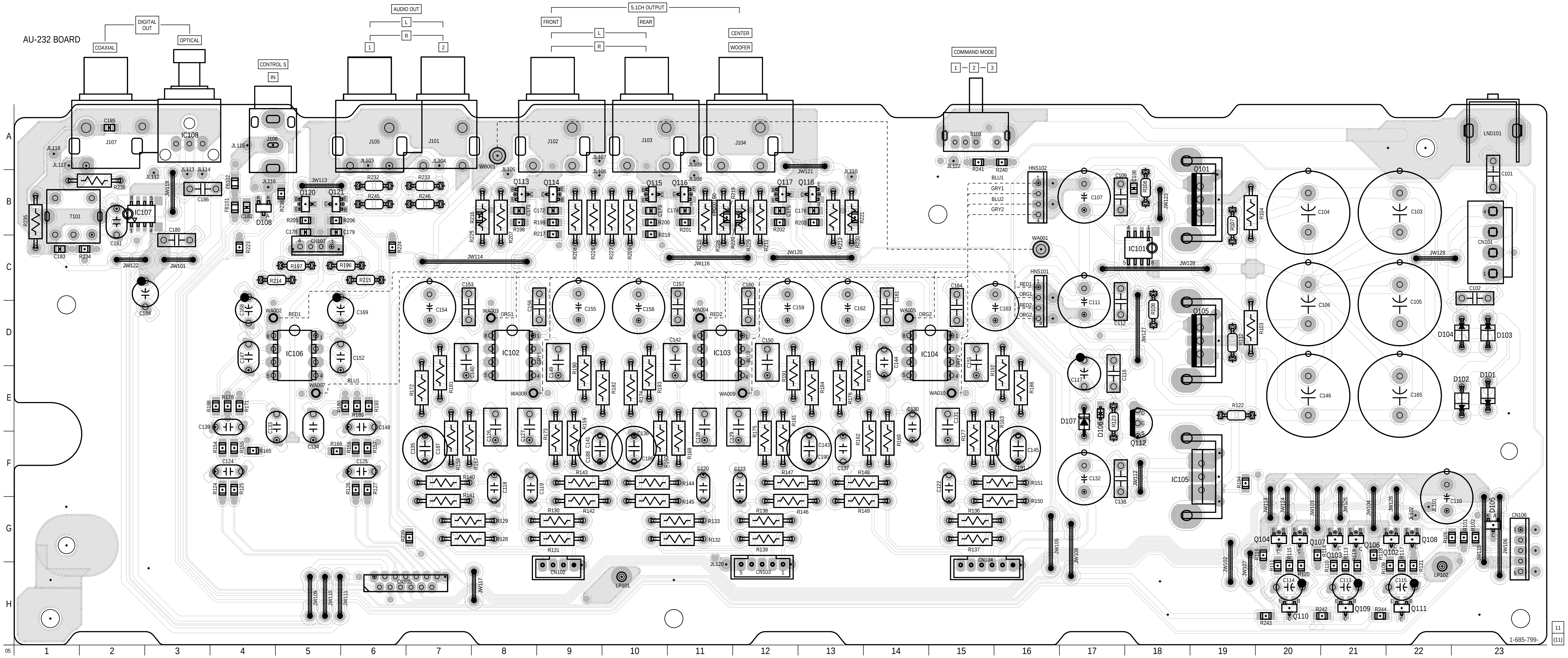
1.3 Vp-p (H)

There are a few cases that the part isn't mounted in this model is printed on this diagram.

## AU-232 (AUDIO OUT) PRINTED WIRING BOARD

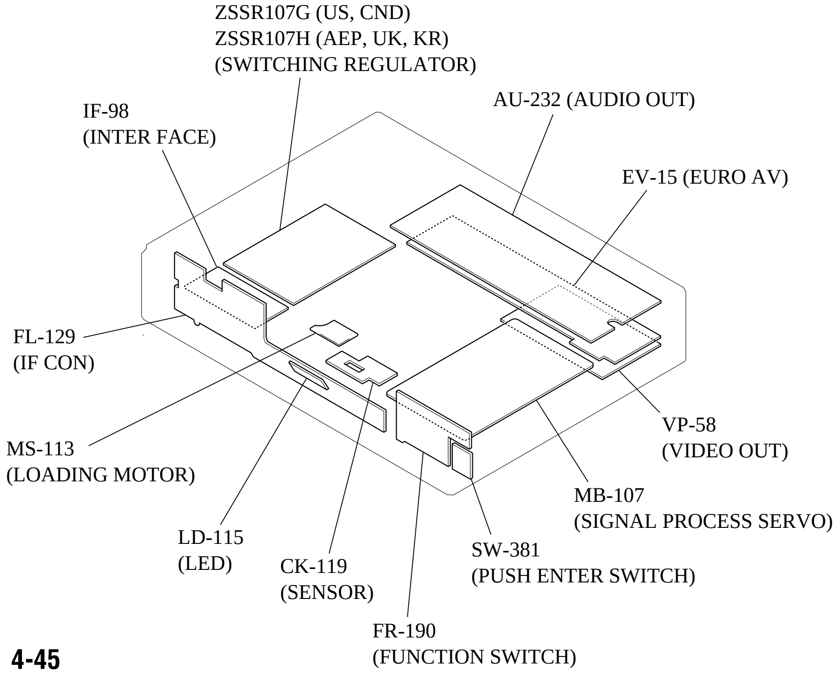
– Ref. No.: AU-232 board; 1,000 series –

LF : Uses unleaded solder.


AU-232 BOARD
DIGITAL OUT
COAXIAL
OPTICAL
CONTROL S
IN
AUDIO OUT
L
R
1
2
5.1CH OUTPUT
FRONT
REAR
L
R
CENTER
WOOFER
COMMAND MODE
1 2 3
J107
IC108
J106
J105
J101
J102
J103
J104
S101
LND101
T101
IC107
IC106
IC102
IC103
IC104
IC101
IC105
Q101
Q105
Q112
CN101
CN102
CN103
CN104
CN105
CN106
CN107
HNS101
HNS102
D101
D102
D103
D104
D105
D106
D107
D108
A
B
C
D
E
F
G
H
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
1-685-799-
11
(11)

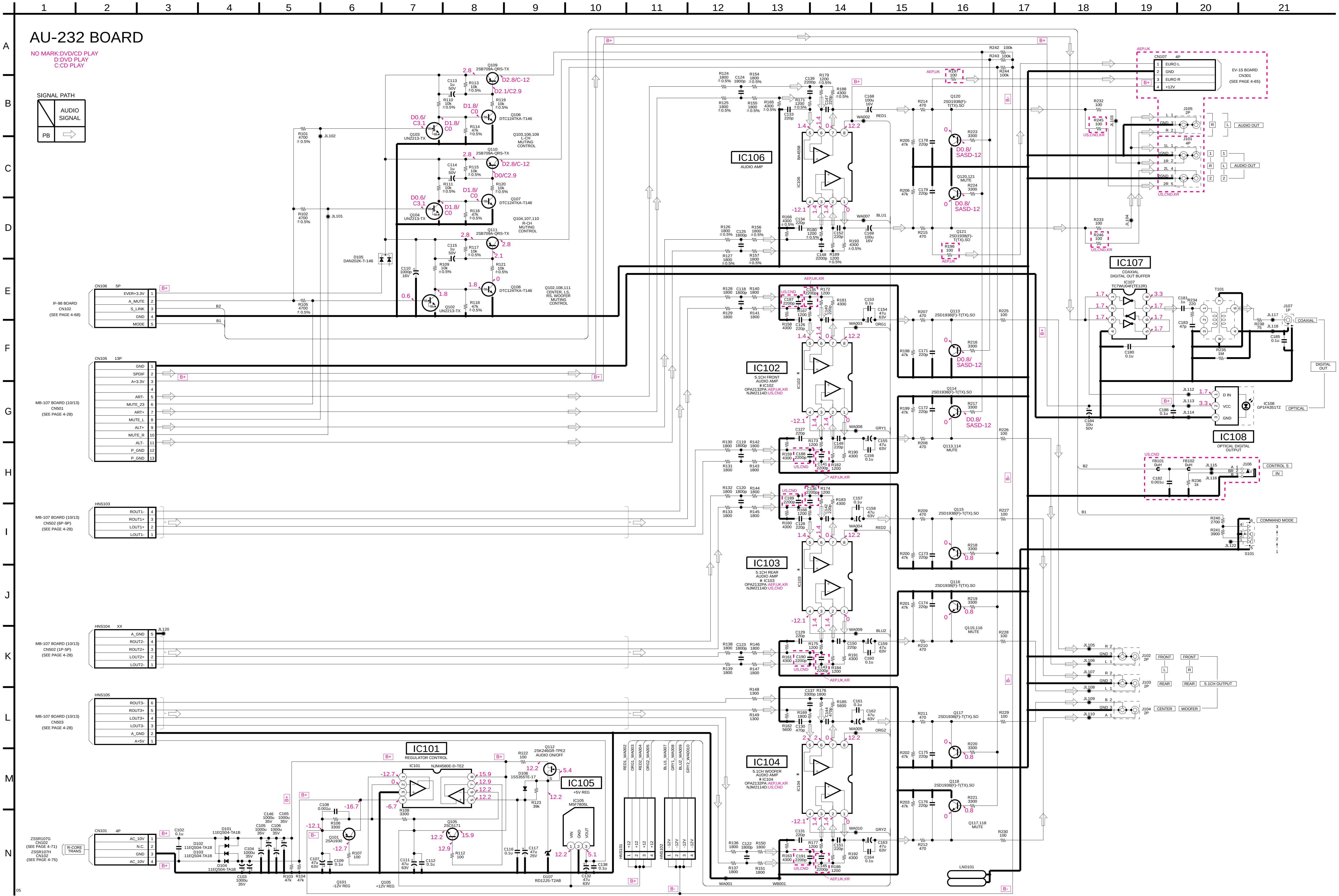
AU-232 BOARD

| | | | |
|---|---|---|---|
| CN101 | C-23 | Q101 | A-19 |
| CN105 | H-7 | Q102 | G-22 |
| CN106 | A-8 | Q103 | G-21 |
| CN501 | G-23 | Q104 | G-20 |
| CN107 | C-5 | Q105 | D-19 |
| | | Q106 | G-21 |
| D101 | E-23 | Q107 | G-20 |
| D102 | E-23 | Q108 | G-22 |
| D103 | D-23 | Q109 | H-21 |
| D104 | D-23 | Q110 | H-20 |
| D105 | G-23 | Q111 | H-22 |
| D106 | E-17 | Q112 | F-18 |
| D107 | E-17 | Q113 | B-8 |
| | | Q114 | B-9 |
| IC101 | C-18 | Q115 | B-10 |
| IC102 | D-8 | Q116 | B-11 |
| IC103 | D-11 | Q117 | B-12 |
| IC104 | D-15 | Q118 | B-13 |
| IC105 | F-19 | Q120 | B-5 |
| IC106 | D-5 | Q121 | B-5 |
| IC107 | B-2 | | |
| IC108 | A-3 | | |


ZSSR107G (US, CND)
ZSSR107H (AEP, UK, KR)
(SWITCHING REGULATOR)
IF-98
(INTER FACE)
AU-232 (AUDIO OUT)
EV-15 (EURO AV)
FL-129
(IF CON)
MS-113
(LOADING MOTOR)
VP-58
(VIDEO OUT)
MB-107
(SIGNAL PROCESS SERVO)
LD-115
(LED)
CK-119
(SENSOR)
SW-381
(PUSH ENTER SWITCH)
FR-190
(FUNCTION SWITCH)

## AU-232 (AUDIO OUT) SCHEMATIC DIAGRAM

– Ref. No.: AU-232 board; 1,000 series –


AU-232 BOARD
NO MARK:DVD/CD PLAY
D:DVD PLAY
C:CD PLAY
SIGNAL PATH
AUDIO SIGNAL
PB
IC106
AUDIO AMP
IC102
5.1CH FRONT AUDIO AMP
IC103
5.1CH REAR AUDIO AMP
IC104
5.1CH WOOFER AUDIO AMP
IC101
REGULATOR CONTROL
NJM4580E-D-TE2
IC105
+5V REG
M5F7805L
IC107
COAXIAL DIGITAL OUT BUFFER
TC7WU04F(TE12R)
IC108
OPTICAL DIGITAL OUTPUT
GP1FA351TZ
Q103,106,109 L-CH MUTING CONTROL
Q104,107,110 R-CH MUTING CONTROL
Q102,108,111 CENTER, LS, RS, WOOFER MUTING CONTROL
Q112 2SK246GR-TPE2 AUDIO ON/OFF
Q120,121 MUTE
Q113,114 MUTE
Q115,116 MUTE
Q117,118 MUTE
Q101 -12V REG
Q105 +12V REG
CN106 5P
IF-98 BOARD CN102 (SEE PAGE 4-68)
CN105 13P
MB-107 BOARD (10/13) CN501 (SEE PAGE 4-28)
HNS103
MB-107 BOARD (10/13) CN502 (6P-9P) (SEE PAGE 4-28)
HNS104
MB-107 BOARD (10/13) CN502 (1P-5P) (SEE PAGE 4-28)
HNS105
MB-107 BOARD (10/13) CN503 (SEE PAGE 4-28)
CN101 4P
ZSSR107G CN102 (SEE PAGE 4-71)
ZSSR107H CN102 (SEE PAGE 4-75)
R-CORE TRANS
CN107 4P
EV-15 BOARD CN301 (SEE PAGE 4-65)
EURO L
GND
EURO R
+12V
J105 2P
AUDIO OUT
J101 4P
J107 1P
COAXIAL
DIGITAL OUT
OPTICAL
J106
CONTROL S
IN
S101
COMMAND MODE
J102 2P
FRONT
J103 2P
REAR
5.1CH OUTPUT
J104 2P
CENTER
WOOFER
T101
LND101
AEP,UK
US,CND,KR
AEP,UK,KR
US,CND

**AUDIO OUT**
**AU-232**

There are a few cases that the part isn't mounted in this model is printed on this diagram.

## FL-129 (IF CON) PRINTED WIRING BOARD

– Ref. No.: FL-129 board; 4,000 series –

: Uses unleaded solder.

FL-129 BOARD (SIDE A)

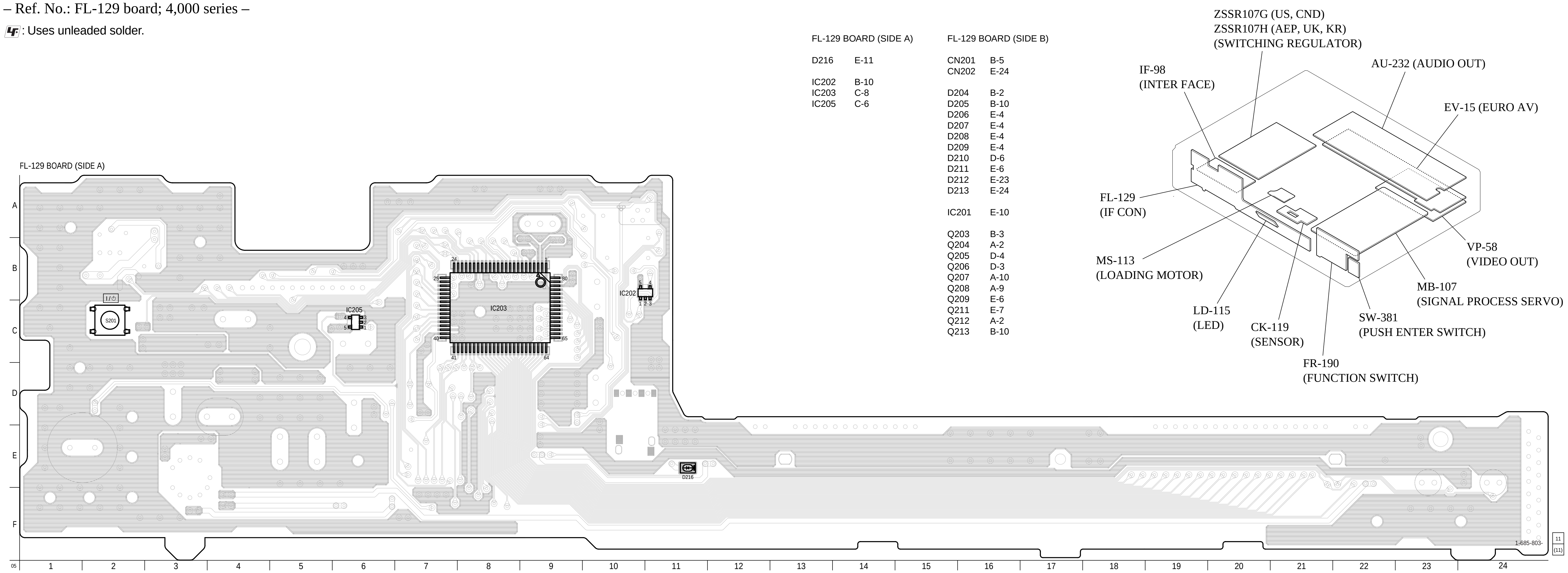
| Ref. | Location |
|---|---|
| D216 | E-11 |
| IC202 | B-10 |
| IC203 | C-8 |
| IC205 | C-6 |

FL-129 BOARD (SIDE B)

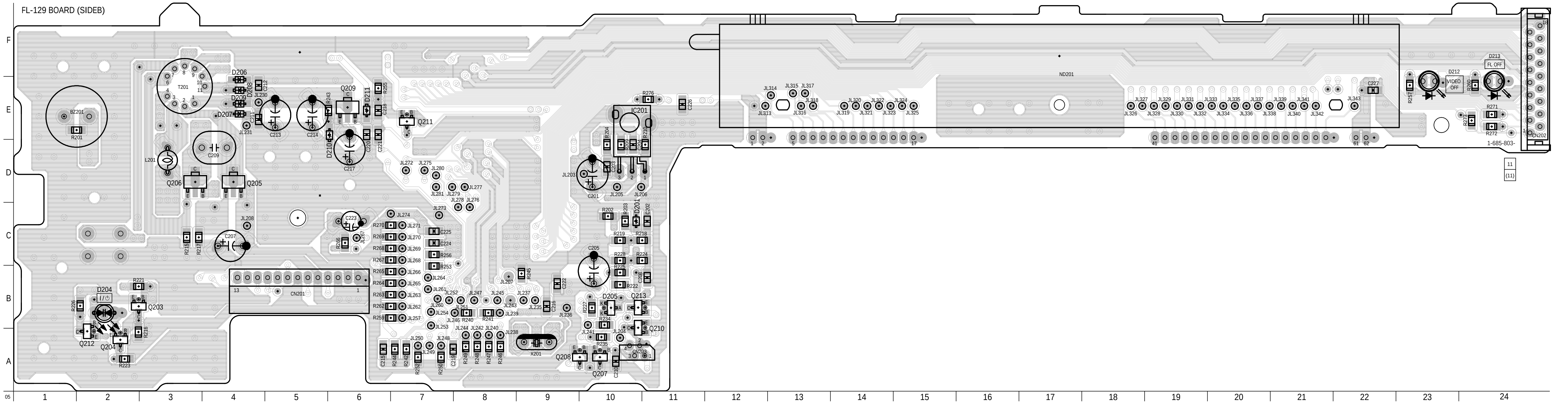
| Ref. | Location |
|---|---|
| CN201 | B-5 |
| CN202 | E-24 |
| D204 | B-2 |
| D205 | B-10 |
| D206 | E-4 |
| D207 | E-4 |
| D208 | E-4 |
| D209 | E-4 |
| D210 | D-6 |
| D211 | E-6 |
| D212 | E-23 |
| D213 | E-24 |
| IC201 | E-10 |
| Q203 | B-3 |
| Q204 | A-2 |
| Q205 | D-4 |
| Q206 | D-3 |
| Q207 | A-10 |
| Q208 | A-9 |
| Q209 | E-6 |
| Q211 | E-7 |
| Q212 | A-2 |
| Q213 | B-10 |

ZSSR107G (US, CND)
ZSSR107H (AEP, UK, KR)
(SWITCHING REGULATOR)
AU-232 (AUDIO OUT)
IF-98
(INTER FACE)
EV-15 (EURO AV)
FL-129
(IF CON)
MS-113
(LOADING MOTOR)
VP-58
(VIDEO OUT)
MB-107
(SIGNAL PROCESS SERVO)
LD-115
(LED)
CK-119
(SENSOR)
SW-381
(PUSH ENTER SWITCH)
FR-190
(FUNCTION SWITCH)

FL-129 BOARD (SIDE A)

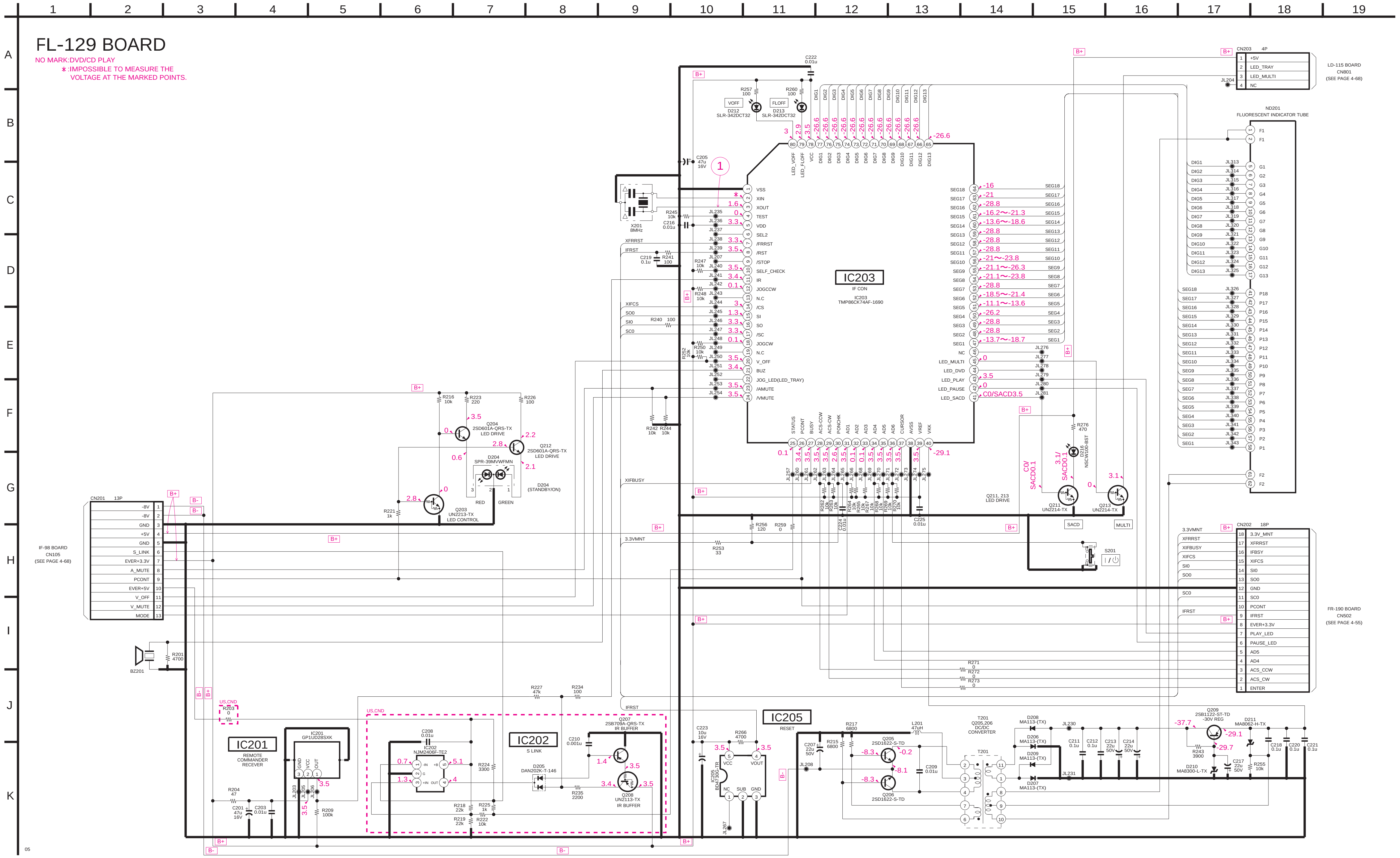

A
B
C
D
E
F
S201
IC205
IC203
IC202
D216
1-685-803-
11
(11)
05
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24

FL-129 BOARD (SIDEB)


F
E
D
C
B
A
BZ201
R201
T201
D206
D208
D209
D207
Q209
D211
Q211
C213
C214
D210
C217
C209
L201
Q206
Q205
C207
CN201
D204
Q203
Q212
Q204
R223
IC201
D205
Q213
Q210
Q208
Q207
X201
ND201
D213
D212
FL OFF
VIDEO OFF
CN202
R271
R272
1-685-803-
11
(11)
05
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24

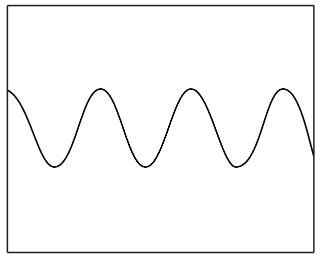
## FL-129 (IF CON) SCHEMATIC DIAGRAM

– Ref. No.: FL-129 board; 4,000 series –


FL-129 BOARD
NO MARK:DVD/CD PLAY
∗:IMPOSSIBLE TO MEASURE THE VOLTAGE AT THE MARKED POINTS.
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
A B C D E F G H I J K
IC203
IF CON
IC203
TMP86CK74AF-1690
IC201
REMOTE COMMANDER RECEIVER
IC201 GP1UD285XK
IC202
S LINK
IC205
RESET
CN201 13P
IF-98 BOARD CN105 (SEE PAGE 4-68)
-8V
GND
+5V
S_LINK
EVER+3.3V
A_MUTE
PCONT
EVER+5V
V_OFF
V_MUTE
MODE
CN203 4P
+5V
LED_TRAY
LED_MULTI
NC
LD-115 BOARD CN801 (SEE PAGE 4-68)
ND201
FLUORESCENT INDICATOR TUBE
CN202 18P
3.3V_MNT
XFRRST
IFBSY
XIFCS
SIO
SOO
GND
SCO
PCONT
IFRST
EVER+3.3V
PLAY_LED
PAUSE_LED
AD5
AD4
ACS_CCW
ACS_CW
ENTER
FR-190 BOARD CN502 (SEE PAGE 4-55)
X201 8MHz
D212 SLR-342DCT32
D213 SLR-342DCT32
VOFF
FLOFF
Q204 2SD601A-QRS-TX LED DRIVE
Q212 2SD601A-QRS-TX LED DRIVE
D204 SPR-39MVWFMN
D204 (STANDBY/ON)
RED
GREEN
Q203 UN2213-TX LED CONTROL
Q211, 213 LED DRIVE
Q211 UN2214-TX
Q213 UN2214-TX
D211 NSCW100-BST
SACD
MULTI
S201
BZ201
R201 4700
IC202 NJM2406F-TE2
Q207 2SB709A-QRS-TX IR BUFFER
Q208 UN2113-TX IR BUFFER
D205 DAN202K-T-146
US,CND
T201 Q205,206 DC/DC CONVERTER
Q205 2SD1622-S-TD
Q206 2SD1622-S-TD
L201 47uH
D206 MA113-(TX)
D207 MA113-(TX)
D208 MA113-(TX)
D209 MA113-(TX)
Q209 2SB1122-ST-TD -30V REG
D211 MA8062-H-TX
D210 MA8300-L-TX
B+
B-
05

**• Waveforms**

① IC203 ③



3.4 Vp-p (8 MHz)

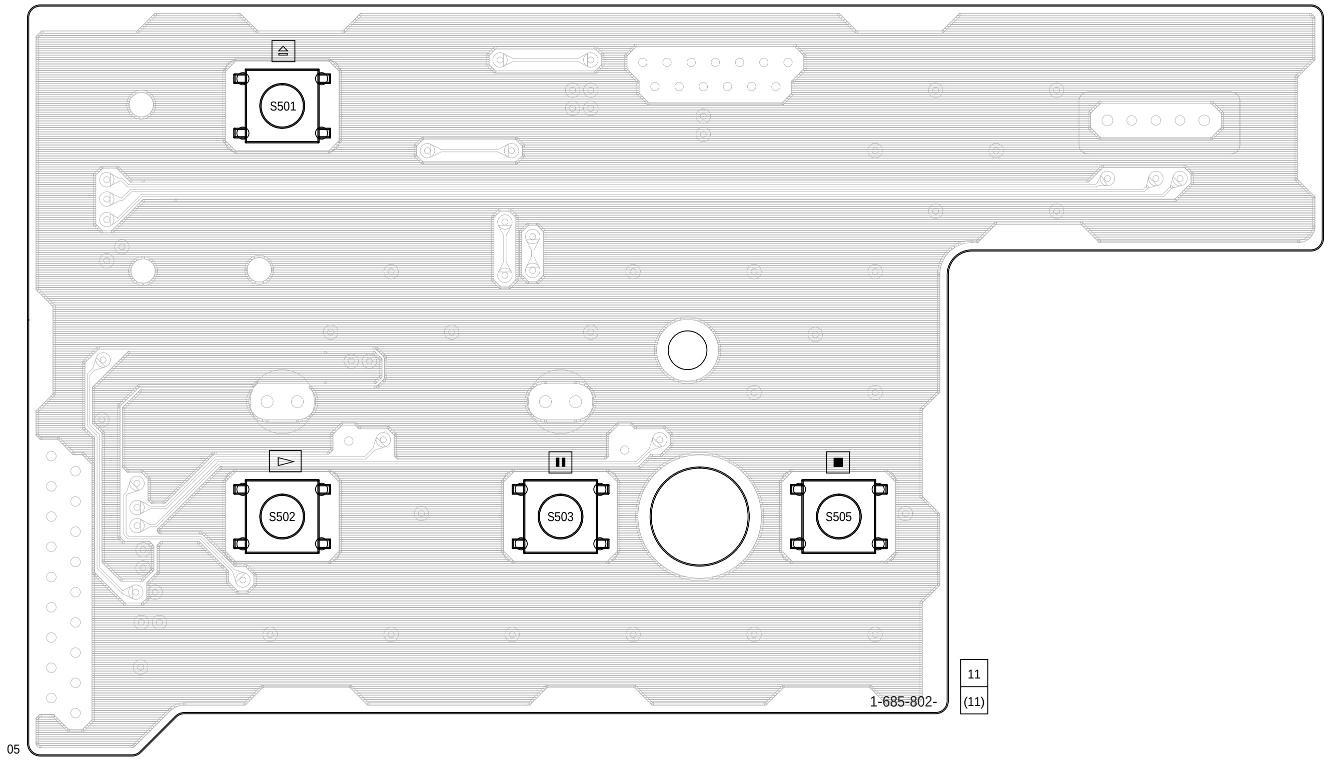
There are a few cases that the part isn't mounted in this model is printed on this diagram.

## FR-190 (FUNCTION SWITCH), SW-381 (PUSH ENTER SWITCH) PRINTED WIRING BOARD

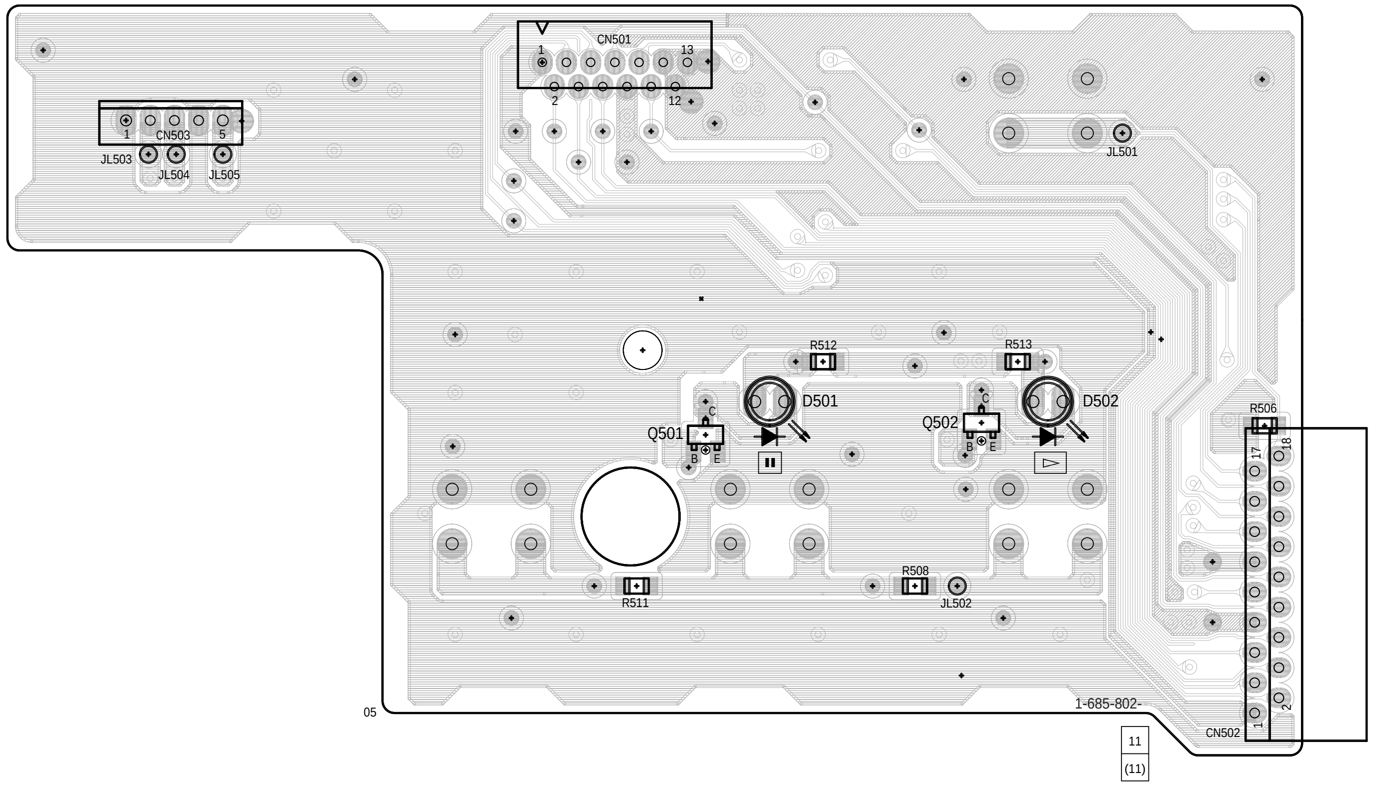
– Ref. No.: FR-190, SW-381 board; 2,000 series –

: Uses unleaded solder.

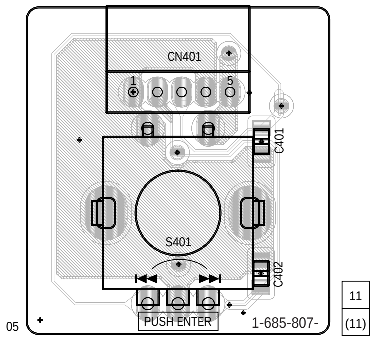
FR-190 BOARD (SIDE A)

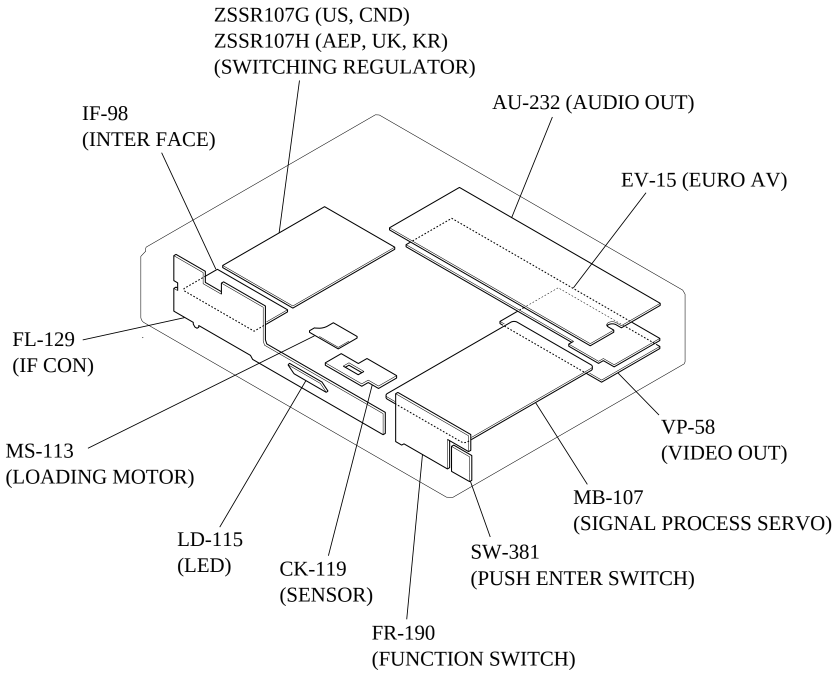

S501
S502
S503
S505
1-685-802-
11
(11)
05

FR-190 BOARD (SIDE B)


CN501
1
13
2
12
1
CN503
5
JL503
JL504
JL505
JL501
R512
R513
D501
D502
Q501
Q502
C
B
E
R506
17
18
R508
R511
JL502
1-685-802-
05
CN502
1
2
11
(11)

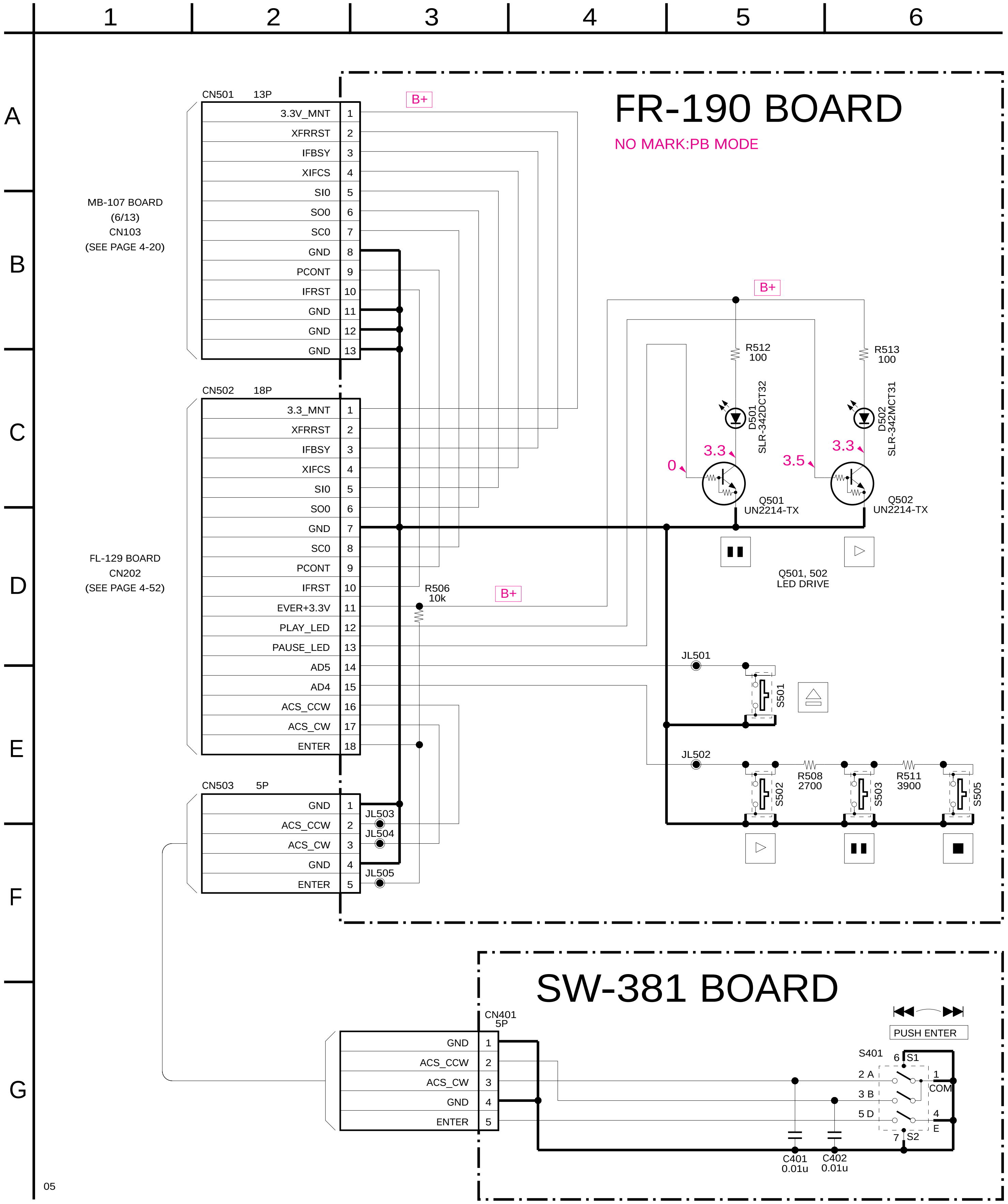
SW-381 BOARD


CN401
1
5
C401
C402
S401
PUSH ENTER
1-685-807-
05
11
(11)


ZSSR107G (US, CND)
ZSSR107H (AEP, UK, KR)
(SWITCHING REGULATOR)
IF-98
(INTER FACE)
AU-232 (AUDIO OUT)
EV-15 (EURO AV)
FL-129
(IF CON)
MS-113
(LOADING MOTOR)
VP-58
(VIDEO OUT)
MB-107
(SIGNAL PROCESS SERVO)
LD-115
(LED)
CK-119
(SENSOR)
SW-381
(PUSH ENTER SWITCH)
FR-190
(FUNCTION SWITCH)

## FR-190 (FUNCTION SWITCH), SW-381 (PUSH ENTER SWITCH) SCHEMATIC DIAGRAM

– Ref. No.: FR-190, SW-381 board; 2,000 series –


1
2
3
4
5
6
A
B
C
D
E
F
G
FR-190 BOARD
NO MARK:PB MODE
CN501 13P
3.3V_MNT 1
XFRRST 2
IFBSY 3
XIFCS 4
SI0 5
SO0 6
SC0 7
GND 8
PCONT 9
IFRST 10
GND 11
GND 12
GND 13
MB-107 BOARD
(6/13)
CN103
(SEE PAGE 4-20)
CN502 18P
3.3_MNT 1
XFRRST 2
IFBSY 3
XIFCS 4
SI0 5
SO0 6
GND 7
SC0 8
PCONT 9
IFRST 10
EVER+3.3V 11
PLAY_LED 12
PAUSE_LED 13
AD5 14
AD4 15
ACS_CCW 16
ACS_CW 17
ENTER 18
FL-129 BOARD
CN202
(SEE PAGE 4-52)
CN503 5P
GND 1
ACS_CCW 2
ACS_CW 3
GND 4
ENTER 5
JL503
JL504
JL505
B+
B+
B+
R506
10k
R512
100
R513
100
D501
SLR-342DCT32
D502
SLR-342MCT31
3.3
0
3.3
3.5
Q501
UN2214-TX
Q502
UN2214-TX
Q501, 502
LED DRIVE
JL501
S501
JL502
R508
2700
R511
3900
S502
S503
S505
SW-381 BOARD
CN401
5P
GND 1
ACS_CCW 2
ACS_CW 3
GND 4
ENTER 5
PUSH ENTER
S401
6 S1
2 A
3 B
5 D
1
COM
4
E
7 S2
C401
0.01u
C402
0.01u
05

There are a few cases that the part isn't mounted in this model is printed on this diagram.

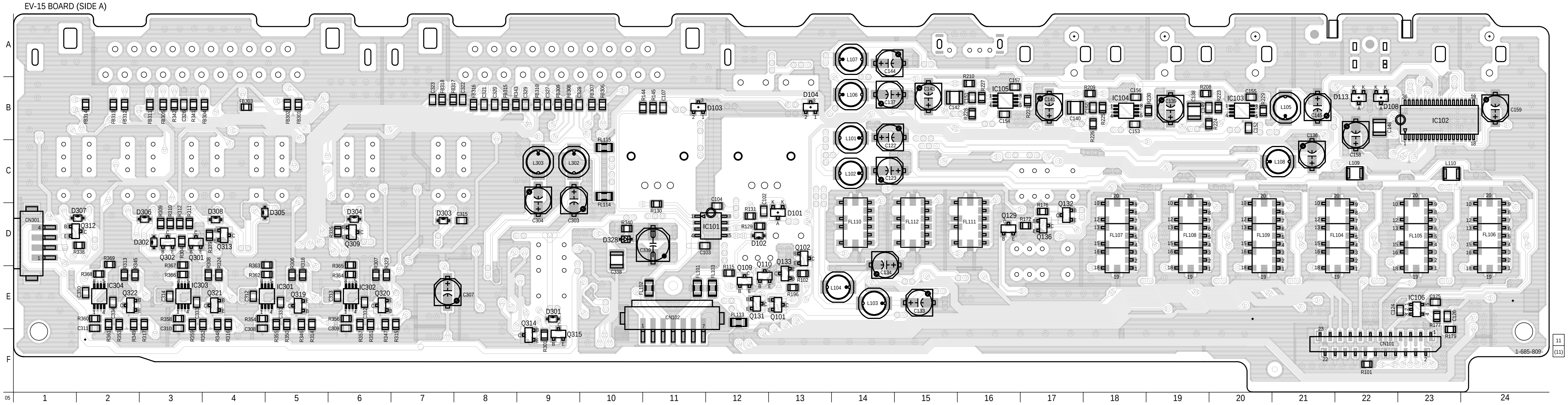
## EV-15 (EURO AV) PRINTED WIRING BOARD

– Ref. No.: EV-15 board; 2,000 series –

**– AEP, UK –**

ℒ𝒻 : Uses unleaded solder.

EV-15 BOARD (SIDE A)

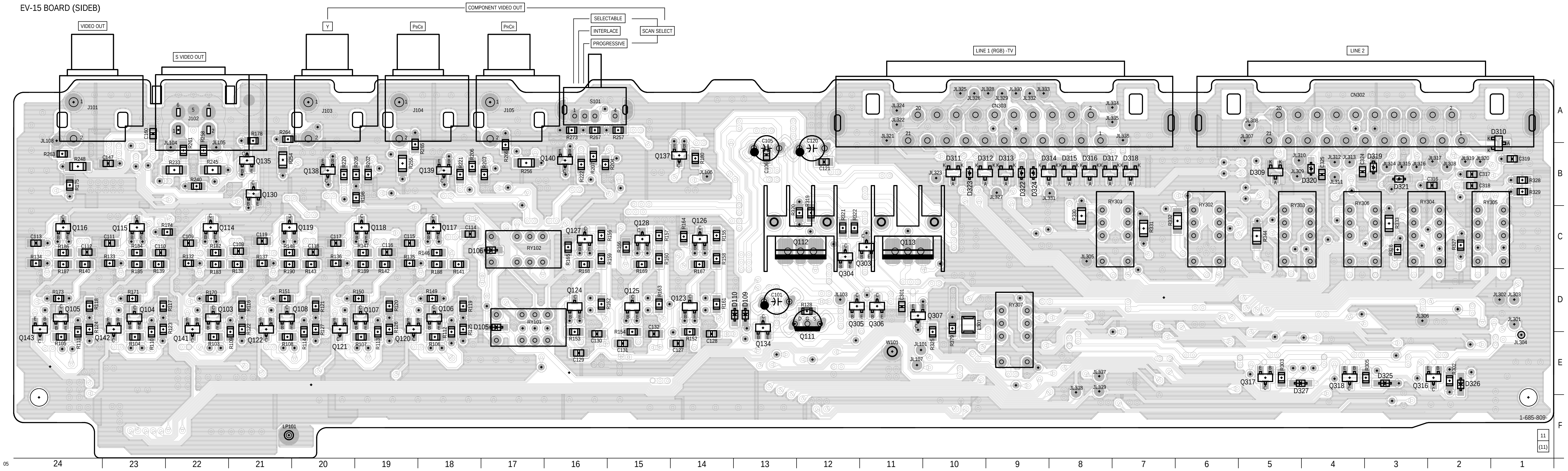


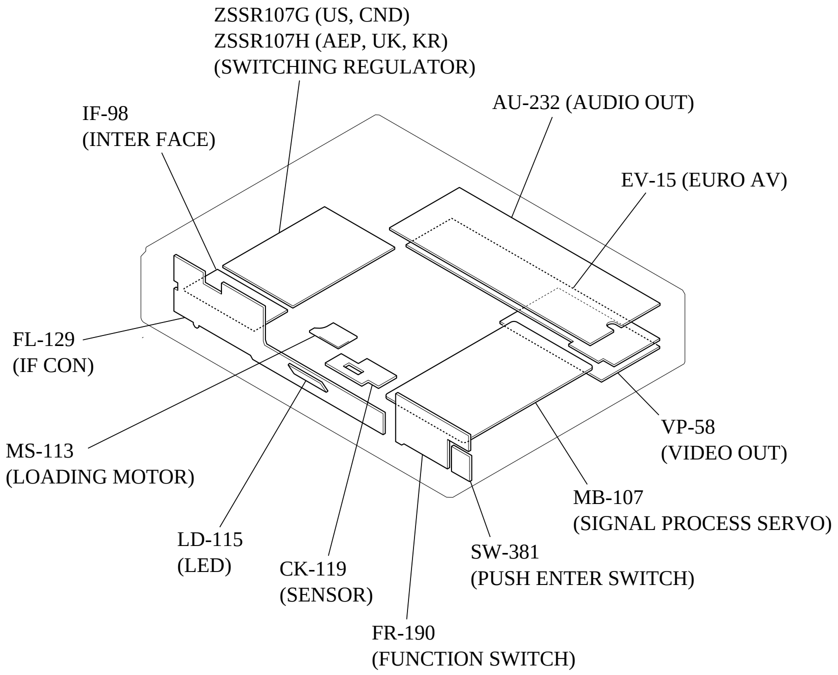
A
B
C
D
E
F
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
CN301
CN102
CN101
IC101
IC102
IC103
IC104
IC105
IC106
IC301
IC302
IC303
IC304
L101
L102
L103
L104
L105
L106
L107
L108
L302
L303
FL104
FL105
FL106
FL107
FL108
FL109
FL110
FL111
FL112
1-685-809-11 (11)

EV-15 BOARD (SIDE A)

| | |
|---|---|
| CN101 | F-22 |
| CN102 | E-11 |
| CN301 | D-1 |
| D101 | D-13 |
| D108 | B-22 |
| D113 | B-22 |
| D301 | E-9 |
| D302 | D-3 |
| D303 | D-7 |
| D304 | D-6 |
| D305 | D-5 |
| D306 | D-3 |
| D307 | D-2 |
| D308 | D-4 |
| IC101 | D-12 |
| IC102 | B-23 |
| IC103 | B-20 |
| IC104 | B-18 |
| IC105 | B-16 |
| IC106 | E-23 |
| IC301 | E-5 |
| IC302 | E-6 |
| IC303 | E-3 |
| IC304 | E-23 |
| Q101 | E-13 |
| Q102 | D-13 |
| Q109 | E-12 |
| Q110 | E-12 |
| Q129 | D-16 |
| Q131 | E-12 |
| Q132 | D-17 |
| Q133 | D-13 |
| Q136 | D-17 |
| Q301 | D-3 |
| Q302 | D-3 |
| Q309 | D-6 |
| Q312 | D-2 |
| Q313 | D-4 |
| Q314 | E-9 |
| Q315 | F-9 |
| Q319 | E-5 |
| Q320 | E-6 |
| Q321 | E-4 |
| Q322 | E-2 |

EV-15 BOARD (SIDEB)


VIDEO OUT
S VIDEO OUT
COMPONENT VIDEO OUT
Y
PB/CB
PR/CR
SELECTABLE
INTERLACE
PROGRESSIVE
SCAN SELECT
LINE 1 (RGB) -TV
LINE 2
J101
J102
J103
J104
J105
S101
CN302
CN303
RY101
RY102
RY301
RY302
RY303
RY304
RY305
RY306
RY307
Q111
Q112
Q113
LP101
1-685-809-
11
(11)
A
B
C
D
E
F
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1


ZSSR107G (US, CND)
ZSSR107H (AEP, UK, KR)
(SWITCHING REGULATOR)
AU-232 (AUDIO OUT)
IF-98
(INTER FACE)
EV-15 (EURO AV)
FL-129
(IF CON)
MS-113
(LOADING MOTOR)
VP-58
(VIDEO OUT)
MB-107
(SIGNAL PROCESS SERVO)
LD-115
(LED)
CK-119
(SENSOR)
SW-381
(PUSH ENTER SWITCH)
FR-190
(FUNCTION SWITCH)

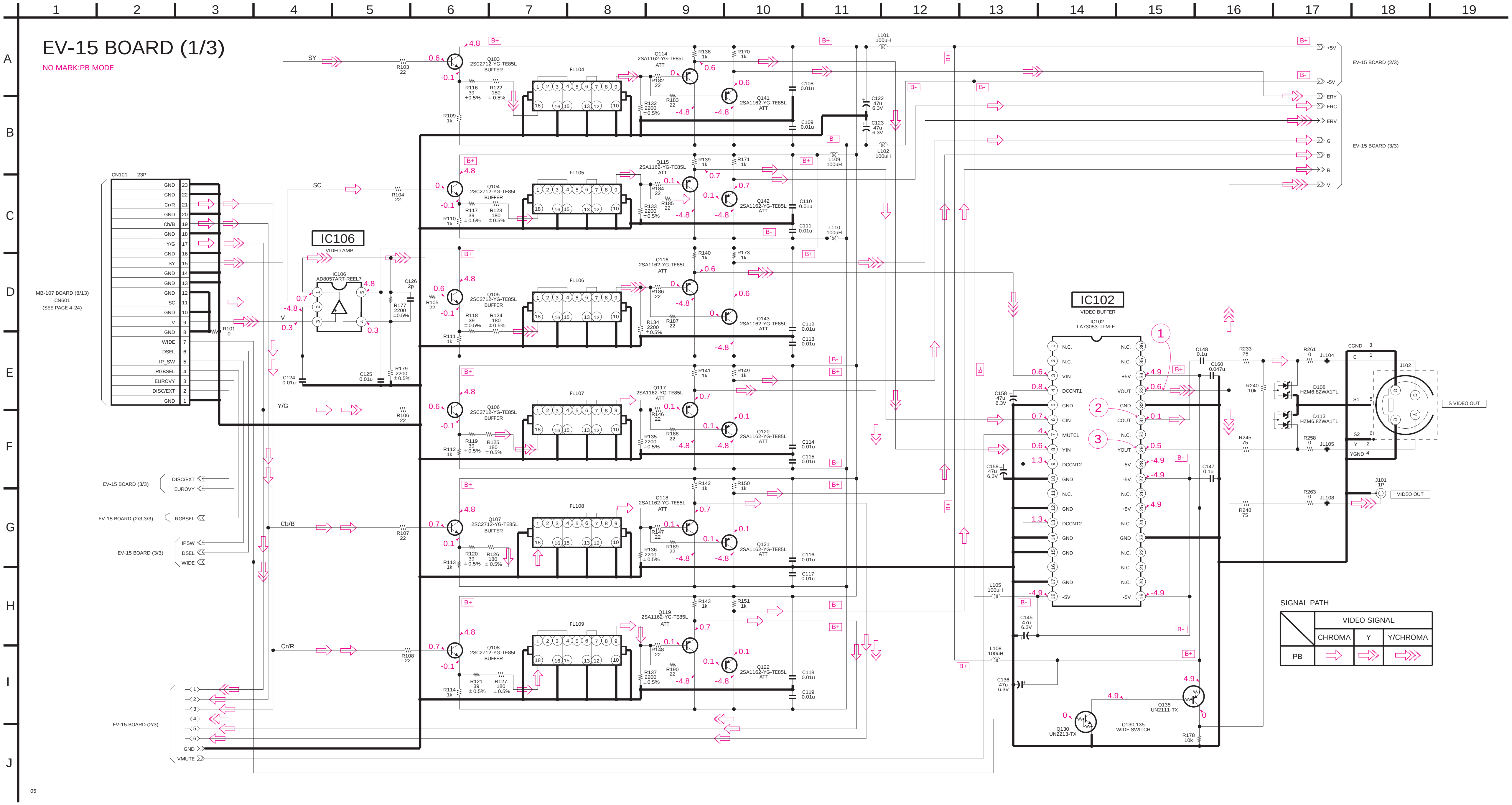
EV-15 BOARD(SIDE B)

| | | | |
|---|---|---|---|
| CN302 | A-4 | Q114 | C-22 |
| CN303 | A-9 | Q115 | C-23 |
| | | Q116 | C-24 |
| D105 | D-17 | Q117 | C-18 |
| D106 | C-18 | Q118 | C-19 |
| D109 | D-13 | Q119 | C-20 |
| D110 | D-13 | Q120 | E-19 |
| D309 | B-5 | Q121 | E-20 |
| D310 | A-1 | Q122 | E-21 |
| D311 | B-10 | Q123 | D-14 |
| D312 | B-9 | Q124 | D-16 |
| D313 | B-9 | Q125 | D-15 |
| D314 | B-8 | Q126 | C-14 |
| D315 | B-8 | Q127 | C-16 |
| D316 | B-8 | Q128 | C-15 |
| D317 | B-8 | Q130 | B-21 |
| D318 | B-7 | Q134 | E-13 |
| D320 | B-4 | Q135 | B-21 |
| D321 | B-3 | Q136 | D-17 |
| D323 | B-10 | Q137 | B-15 |
| D324 | B-9 | Q138 | B-20 |
| D325 | E-3 | Q139 | B-18 |
| D326 | E-2 | Q140 | B-16 |
| D327 | E-4 | Q141 | E-22 |
| | | Q142 | E-23 |
| Q103 | D-22 | Q143 | E-24 |
| Q104 | D-23 | Q303 | C-11 |
| Q105 | D-24 | Q304 | D-12 |
| Q106 | D-19 | Q305 | D-12 |
| Q107 | D-19 | Q306 | D-11 |
| Q108 | D-20 | Q307 | D-10 |
| Q111 | E-12 | Q316 | E-3 |
| Q112 | C-12 | Q317 | E-5 |
| Q113 | C-11 | Q318 | E-4 |

## EV-15 (EURO AV1) SCHEMATIC DIAGRAM • See page 4-57 for printed wiring board.

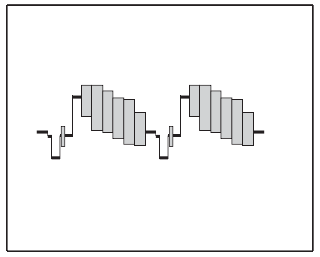
– Ref. No.: EV-15 board; 2,000 series –

**– AEP, UK –**


EV-15 BOARD (1/3)
NO MARK:PB MODE
CN101 23P
MB-107 BOARD (8/13) CN601 (SEE PAGE 4-24)
GND
Cr/R
Cb/B
Y/G
SY
SC
V
WIDE
DSEL
IP_SW
RGBSEL
EUROVY
DISC/EXT
IC106
VIDEO AMP
IC106 AD8057ART-REEL7
Q103 2SC2712-YG-TE85L BUFFER
Q104 2SC2712-YG-TE85L BUFFER
Q105 2SC2712-YG-TE85L BUFFER
Q106 2SC2712-YG-TE85L BUFFER
Q107 2SC2712-YG-TE85L BUFFER
Q108 2SC2712-YG-TE85L BUFFER
Q114 2SA1162-YG-TE85L ATT
Q115 2SA1162-YG-TE85L ATT
Q116 2SA1162-YG-TE85L ATT
Q117 2SA1162-YG-TE85L ATT
Q118 2SA1162-YG-TE85L ATT
Q119 2SA1162-YG-TE85L ATT
Q141 2SA1162-YG-TE85L ATT
Q142 2SA1162-YG-TE85L ATT
Q143 2SA1162-YG-TE85L ATT
Q120 2SA1162-YG-TE85L ATT
Q121 2SA1162-YG-TE85L ATT
Q122 2SA1162-YG-TE85L ATT
FL104
FL105
FL106
FL107
FL108
FL109
IC102
VIDEO BUFFER
IC102 LA73053-TLM-E
N.C.
VIN
DCCNT1
GND
CIN
MUTE1
YIN
DCCNT2
+5V
VOUT
COUT
YOUT
-5V
Q130 UN2213-TX
Q135 UN2111-TX
Q130,135 WIDE SWITCH
D108 HZM6.8ZWA1TL
D113 HZM6.8ZWA1TL
J102
S VIDEO OUT
J101 1P
VIDEO OUT
EV-15 BOARD (2/3)
EV-15 BOARD (3/3)
EV-15 BOARD (2/3,3/3)
+5V
-5V
ERY
ERC
ERV
G
B
R
V
GND
VMUTE
SIGNAL PATH
VIDEO SIGNAL
CHROMA
Y
Y/CHROMA
PB
05

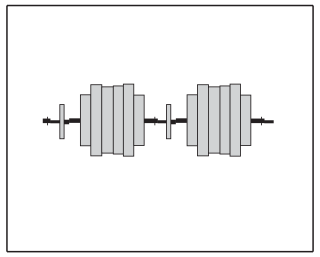
**• Waveforms**

❶ IC102 ㉝



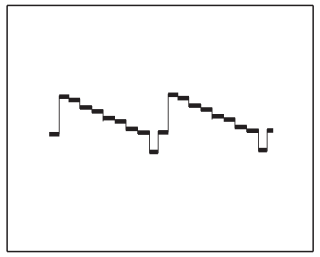
2.4 Vp-p (H)

❷ IC102 ㉛



1.8 Vp-p (H)

❸ IC102 ㉙

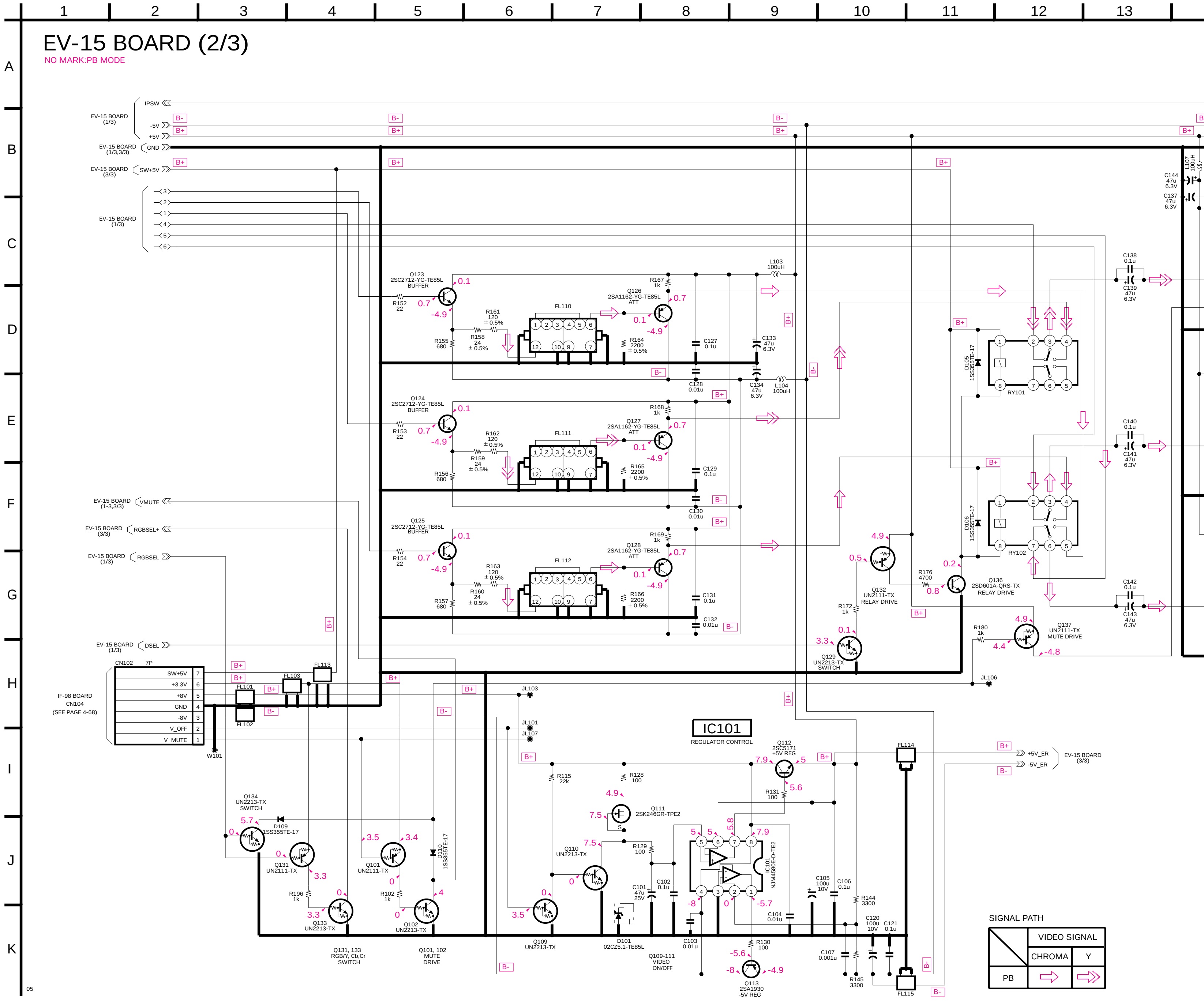


2.0 Vp-p (H)

## EV-15 (EURO AV2) SCHEMATIC DIAGRAM • See page 4-57 for printed wiring board.

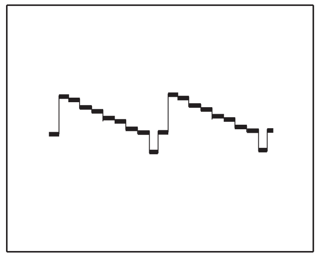
– Ref. No.: EV-15 board; 2,000 series –

**– AEP, UK –**


EV-15 BOARD (2/3)
NO MARK:PB MODE
EV-15 BOARD (1/3)
IPSW
-5V
+5V
GND
SW+5V
VMUTE
RGBSEL+
RGBSEL
DSEL
IF-98 BOARD CN104 (SEE PAGE 4-68)
CN102 7P
SW+5V
+3.3V
+8V
GND
-8V
V_OFF
V_MUTE
Q123 2SC2712-YG-TE85L BUFFER
Q124 2SC2712-YG-TE85L BUFFER
Q125 2SC2712-YG-TE85L BUFFER
Q126 2SA1162-YG-TE85L ATT
Q127 2SA1162-YG-TE85L ATT
Q128 2SA1162-YG-TE85L ATT
FL110
FL111
FL112
L103 100uH
L104 100uH
RY101
RY102
D105 1SS355TE-17
D106 1SS355TE-17
Q132 UN2111-TX RELAY DRIVE
Q136 2SD601A-QRS-TX RELAY DRIVE
Q137 UN2111-TX MUTE DRIVE
Q129 UN2213-TX SWITCH
IC103 VIDEO BUFFER
IC103 AD8058ARM-REEL
IC104 VIDEO BUFFER
IC104 AD8058ARM-REEL
IC105 VIDEO BUFFER
IC105 AD8058ARM-REEL
Q138 2SD1938(F)-S(TX).SO MUTE
Q139 2SD1938(F)-S(TX).SO MUTE
Q140 2SD1938(F)-S(TX).SO MUTE
L105 100uH
L106 100uH
S101
SCAN SELECT
SELECTABLE
INTERLACE
PROGRESSIVE
J103 1P Y
J104 1P PB / CB
J105 1P PR / CR
COMPONENT VIDEO OUT
IC101 REGULATOR CONTROL
IC101 NJM2580E-D-TE2
Q112 2SC5171 +5V REG
Q111 2SK246GR-TPE2
Q110 UN2213-TX
Q109 UN2213-TX
Q109-111 VIDEO ON/OFF
D101 02CZ5.1-TE85L
Q113 2SA1930 -5V REG
Q134 UN2213-TX SWITCH
D109 1SS355TE-17
D110 1SS355TE-17
Q131 UN2111-TX
Q133 UN2213-TX
Q131, 133 RGB/Y, Cb,Cr SWITCH
Q101 UN2111-TX
Q102 UN2213-TX
Q101, 102 MUTE DRIVE
FL101
FL102
FL103
FL113
FL114
FL115
JL101
JL103
JL106
JL107
W101
+5V_ER
-5V_ER
EV-15 BOARD (3/3)
SIGNAL PATH
VIDEO SIGNAL
CHROMA
Y
PB

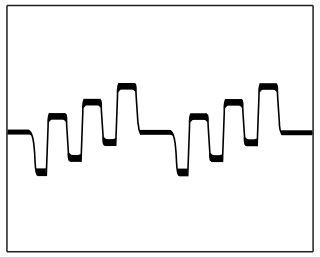
## • Waveforms

❹ IC103 ⑦



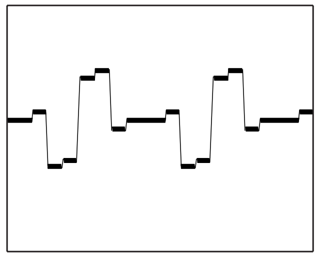
2.0 Vp-p (H)

❺ IC104 ⑦



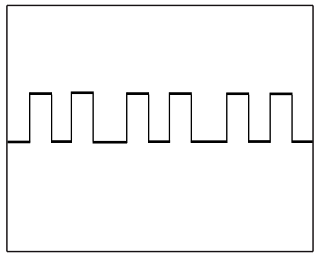
1.3 Vp-p (H)

❻ IC105 ⑦



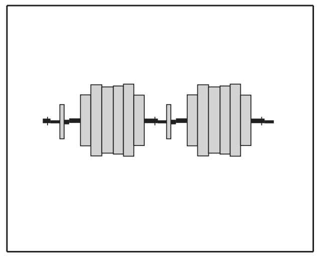
1.3 Vp-p (H)

❼ IC301 ⑦ (LINE : RGB mode)



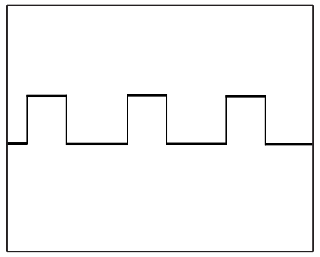
1.4 Vp-p (H)

❼ IC301 ⑦ (LINE : S VIDEO mode)



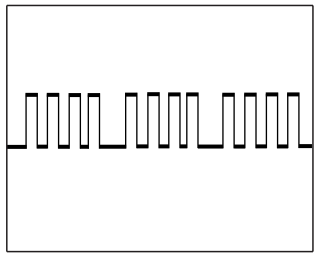
1.7 Vp-p (H)

❽ IC302 ⑦ (LINE : RGB mode)



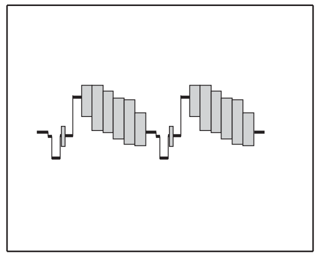
1.4 Vp-p (H)

❾ IC303 ⑦ (LINE : RGB mode)



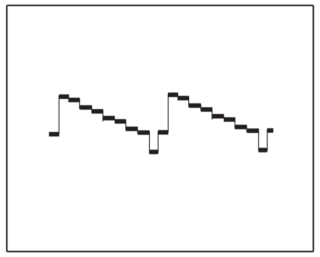
1.4 Vp-p (H)

❿ IC304 ⑦



2.4 Vp-p (H)

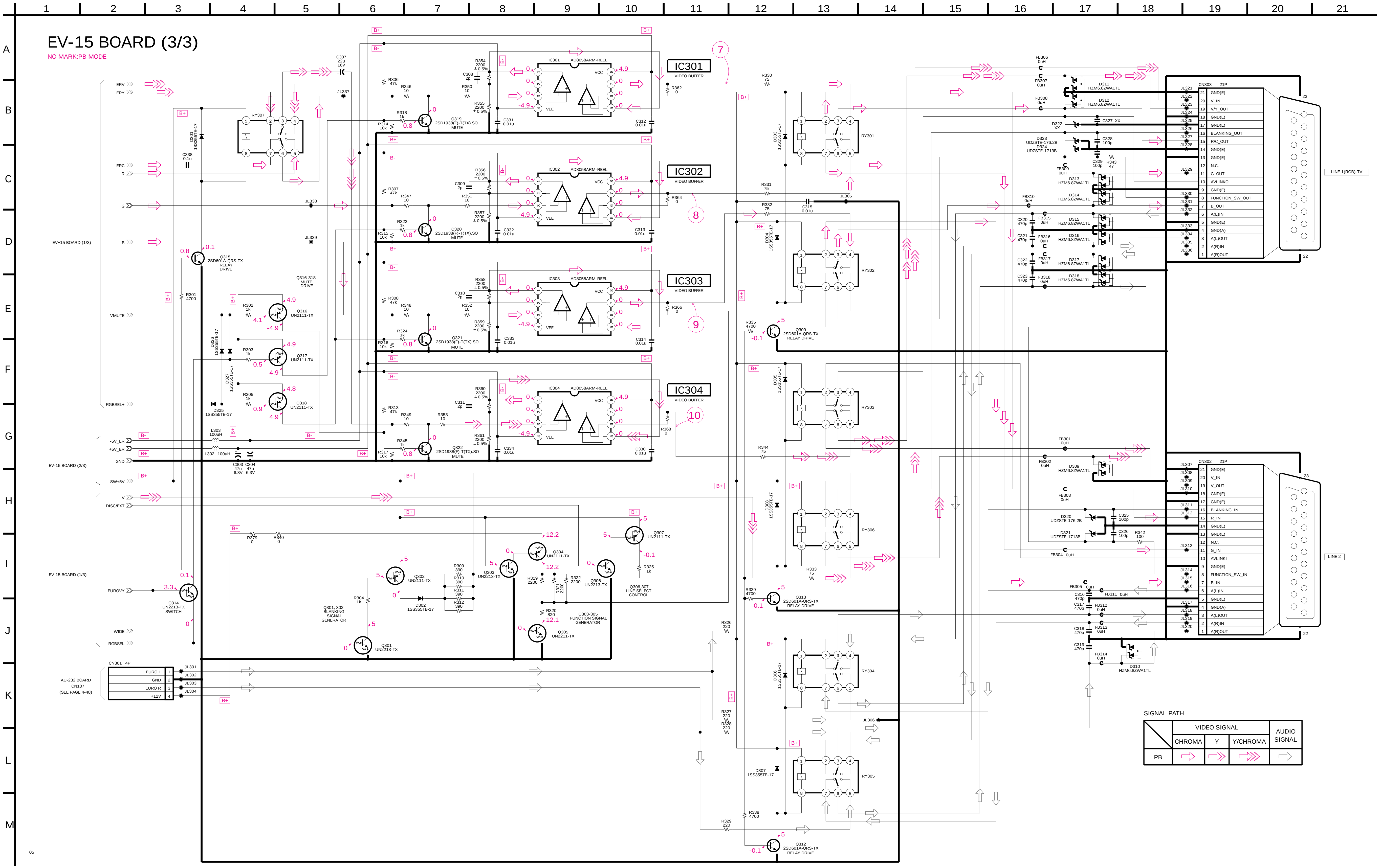
❿ IC304 ⑦ (LINE : S VIDEO mode)



2.0 Vp-p (H)

## EV-15 (EURO AV3) SCHEMATIC DIAGRAM • See page 4-57 for printed wiring board, and see page 4-63 for waveforms.

– Ref. No.: EV-15 board; 2,000 series –


EV-15 BOARD (3/3)
NO MARK:PB MODE
IC301 VIDEO BUFFER
IC302 VIDEO BUFFER
IC303 VIDEO BUFFER
IC304 VIDEO BUFFER
AD8058ARM-REEL
Q315 2SD601A-QRS-TX RELAY DRIVE
Q316-318 MUTE DRIVE
Q319 2SD1938(F)-T(TX).SO MUTE
Q320 2SD1938(F)-T(TX).SO MUTE
Q321 2SD1938(F)-T(TX).SO MUTE
Q322 2SD1938(F)-T(TX).SO MUTE
Q309 2SD601A-QRS-TX RELAY DRIVE
Q313 2SD601A-QRS-TX RELAY DRIVE
Q312 2SD601A-QRS-TX RELAY DRIVE
Q314 UN2213-TX SWITCH
Q301, 302 BLANKING SIGNAL GENERATOR
Q303-305 FUNCTION SIGNAL GENERATOR
Q306,307 LINE SELECT CONTROL
RY301
RY302
RY303
RY304
RY305
RY306
RY307
ERV
ERY
ERC
R
G
B
VMUTE
RGBSEL+
-5V_ER
+5V_ER
GND
SW+5V
V
DISC/EXT
EUROVY
WIDE
RGBSEL
EV+15 BOARD (1/3)
EV-15 BOARD (2/3)
EV-15 BOARD (1/3)
CN301 4P
1 EURO L
2 GND
3 EURO R
4 +12V
AU-232 BOARD CN107 (SEE PAGE 4-48)
CN303 21P
21 GND(E)
20 V_IN
19 V/Y_OUT
18 GND(E)
17 GND(E)
16 BLANKING_OUT
15 R/C_OUT
14 GND(E)
13 GND(E)
12 N.C.
11 G_OUT
10 AVLINKO
9 GND(E)
8 FUNCTION_SW_OUT
7 B_OUT
6 A(L)IN
5 GND(E)
4 GND(A)
3 A(L)OUT
2 A(R)IN
1 A(R)OUT
LINE 1(RGB)-TV
CN302 21P
21 GND(E)
20 V_IN
19 V_OUT
18 GND(E)
17 GND(E)
16 BLANKING_IN
15 R_IN
14 GND(E)
13 GND(E)
12 N.C.
11 G_IN
10 AVLINKI
9 GND(E)
8 FUNCTION_SW_IN
7 B_IN
6 A(L)IN
5 GND(E)
4 GND(A)
3 A(L)OUT
2 A(R)IN
1 A(R)OUT
LINE 2
SIGNAL PATH
VIDEO SIGNAL
CHROMA
Y
Y/CHROMA
AUDIO SIGNAL
PB
05

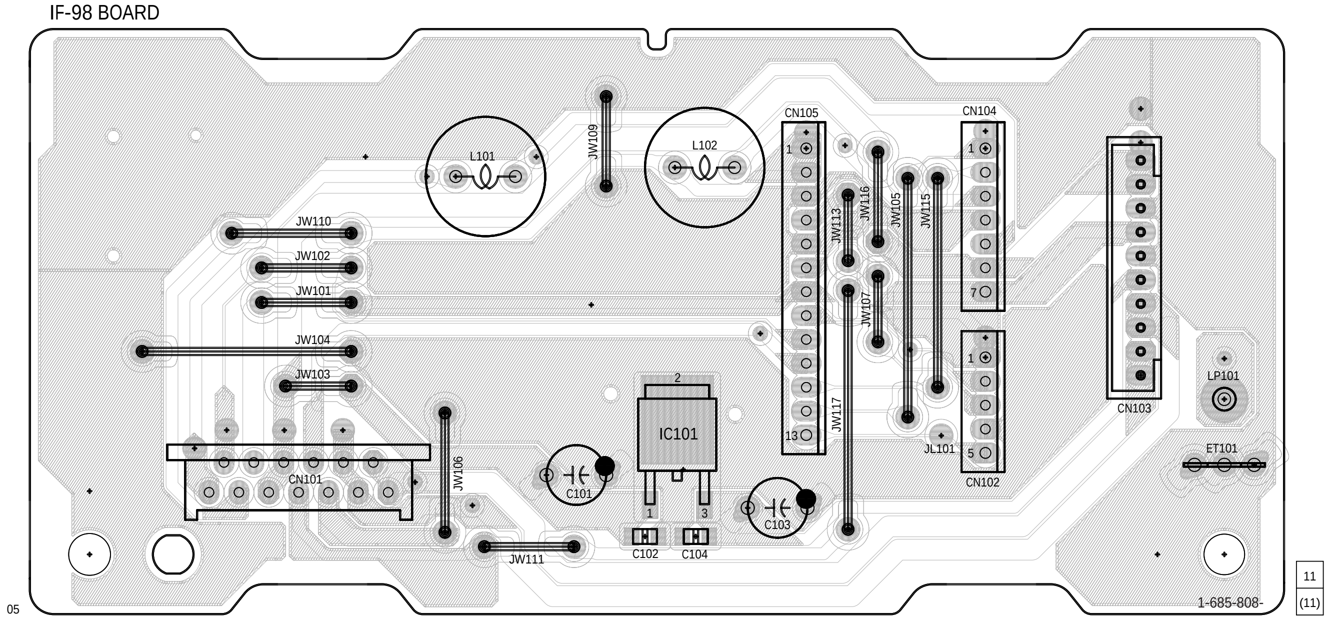
## IF-98 (INTERFACE), LD-115 (LED) PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM

– Ref. No.: IF-98 board; 4,000 series, LD-115 board; 1,000 series –

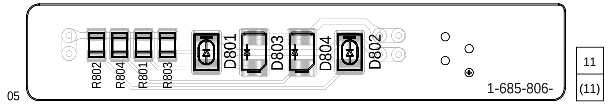
LF : Uses unleaded solder.

There are a few cases that the part isn't mounted in this model is printed on this diagram.

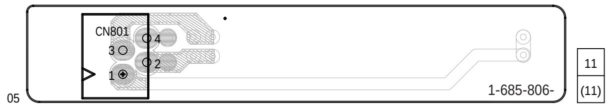
IF-98 BOARD

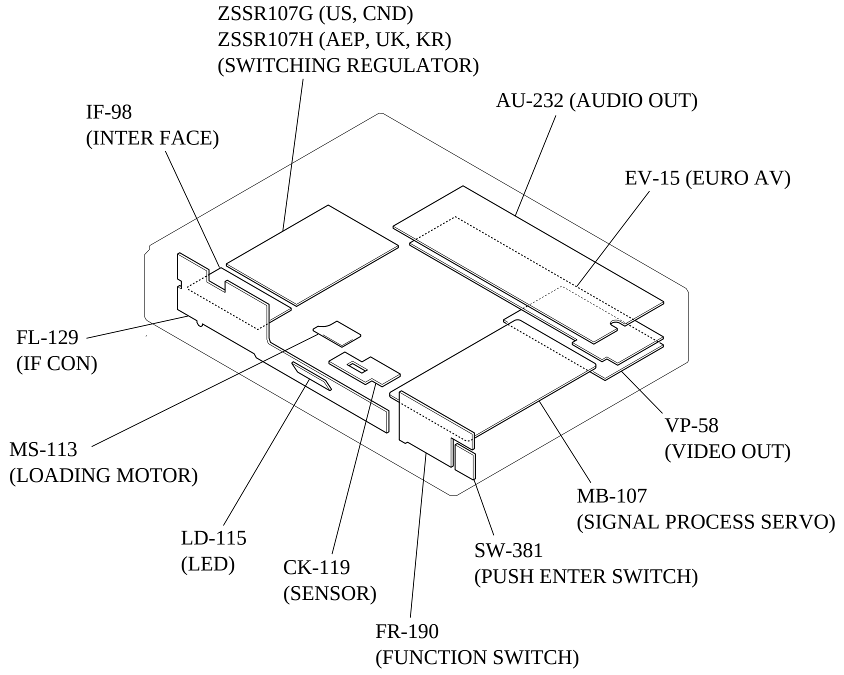

L101
L102
JW109
CN105
CN104
JW110
JW102
JW101
JW104
JW103
JW113
JW118
JW105
JW115
JW107
JW117
JW106
JW111
IC101
C101
C102
C104
C103
CN101
CN102
CN103
JL101
LP101
ET101
1
7
13
5
2
3
05
1-685-808-
11
(11)

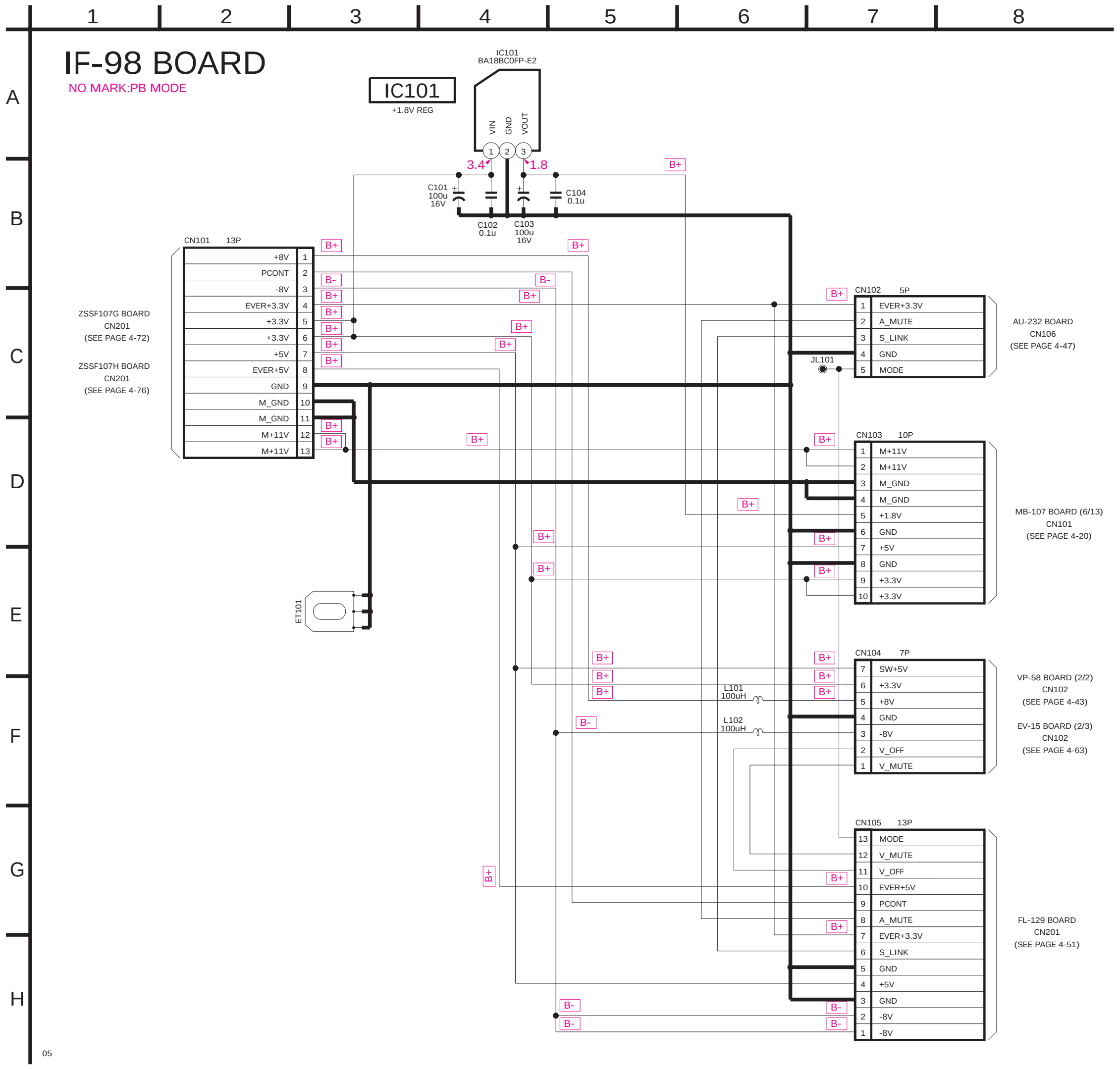
LD-115 BOARD (SIDE A)

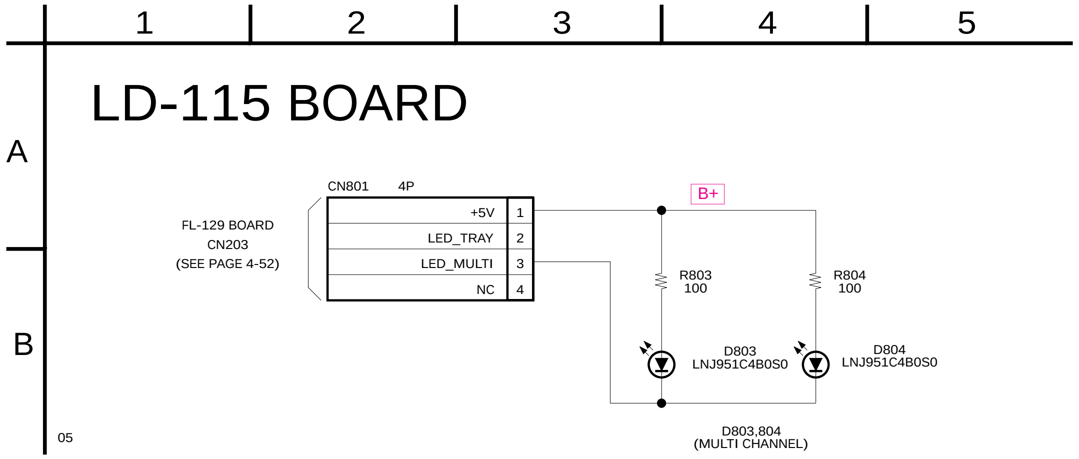

R802
R804
R801
R803
D801
D803
D804
D802
05
1-685-806-
11
(11)

LD-115 BOARD (SIDE B)


CN801
4
3
2
1
05
1-685-806-
11
(11)


ZSSR107G (US, CND)
ZSSR107H (AEP, UK, KR)
(SWITCHING REGULATOR)
IF-98
(INTER FACE)
AU-232 (AUDIO OUT)
EV-15 (EURO AV)
FL-129
(IF CON)
MS-113
(LOADING MOTOR)
VP-58
(VIDEO OUT)
MB-107
(SIGNAL PROCESS SERVO)
LD-115
(LED)
CK-119
(SENSOR)
SW-381
(PUSH ENTER SWITCH)
FR-190
(FUNCTION SWITCH)


1
2
3
4
5
6
7
8
A
B
C
D
E
F
G
H
IF-98 BOARD
NO MARK:PB MODE
IC101
+1.8V REG
IC101
BA18BC0FP-E2
VIN
GND
VOUT
3.4
1.8
C101
100u
16V
C102
0.1u
C103
100u
16V
C104
0.1u
B+
B-
CN101 13P
+8V 1
PCONT 2
-8V 3
EVER+3.3V 4
+3.3V 5
+3.3V 6
+5V 7
EVER+5V 8
GND 9
M_GND 10
M_GND 11
M+11V 12
M+11V 13
ZSSF107G BOARD
CN201
(SEE PAGE 4-72)
ZSSF107H BOARD
CN201
(SEE PAGE 4-76)
ET101
JL101
L101
100uH
L102
100uH
CN102 5P
1 EVER+3.3V
2 A_MUTE
3 S_LINK
4 GND
5 MODE
AU-232 BOARD
CN106
(SEE PAGE 4-47)
CN103 10P
1 M+11V
2 M+11V
3 M_GND
4 M_GND
5 +1.8V
6 GND
7 +5V
8 GND
9 +3.3V
10 +3.3V
MB-107 BOARD (6/13)
CN101
(SEE PAGE 4-20)
CN104 7P
7 SW+5V
6 +3.3V
5 +8V
4 GND
3 -8V
2 V_OFF
1 V_MUTE
VP-58 BOARD (2/2)
CN102
(SEE PAGE 4-43)
EV-15 BOARD (2/3)
CN102
(SEE PAGE 4-63)
CN105 13P
13 MODE
12 V_MUTE
11 V_OFF
10 EVER+5V
9 PCONT
8 A_MUTE
7 EVER+3.3V
6 S_LINK
5 GND
4 +5V
3 GND
2 -8V
1 -8V
FL-129 BOARD
CN201
(SEE PAGE 4-51)
05


1
2
3
4
5
A
B
LD-115 BOARD
CN801 4P
+5V 1
LED_TRAY 2
LED_MULTI 3
NC 4
FL-129 BOARD
CN203
(SEE PAGE 4-52)
B+
R803
100
R804
100
D803
LNJ951C4B0S0
D804
LNJ951C4B0S0
D803,804
(MULTI CHANNEL)
05

## ZSSR107G (SWITCHING REGULATOR) PRINTED WIRING BOARD

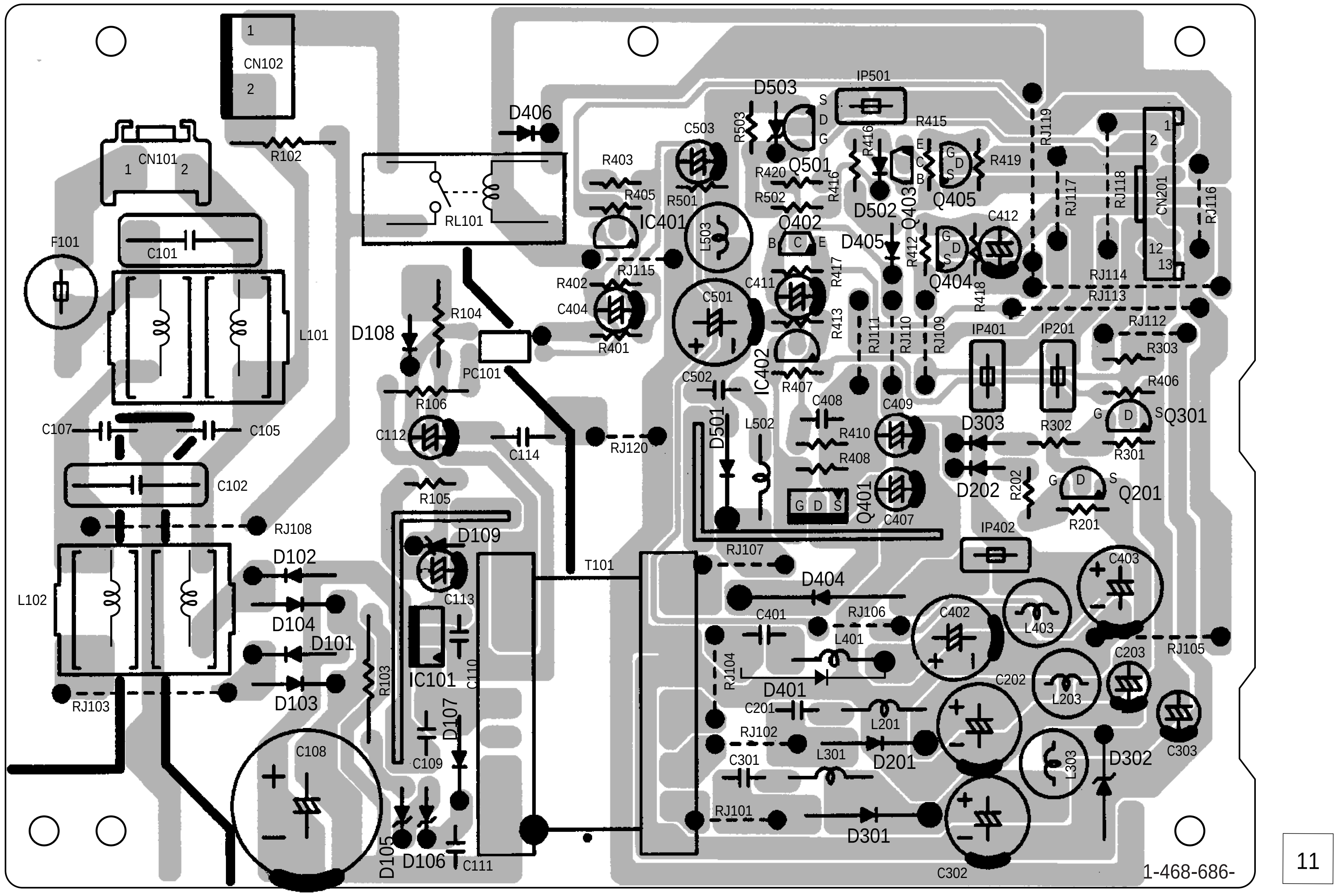
– Ref. No.: ZSSR107G board; 6,000 series –

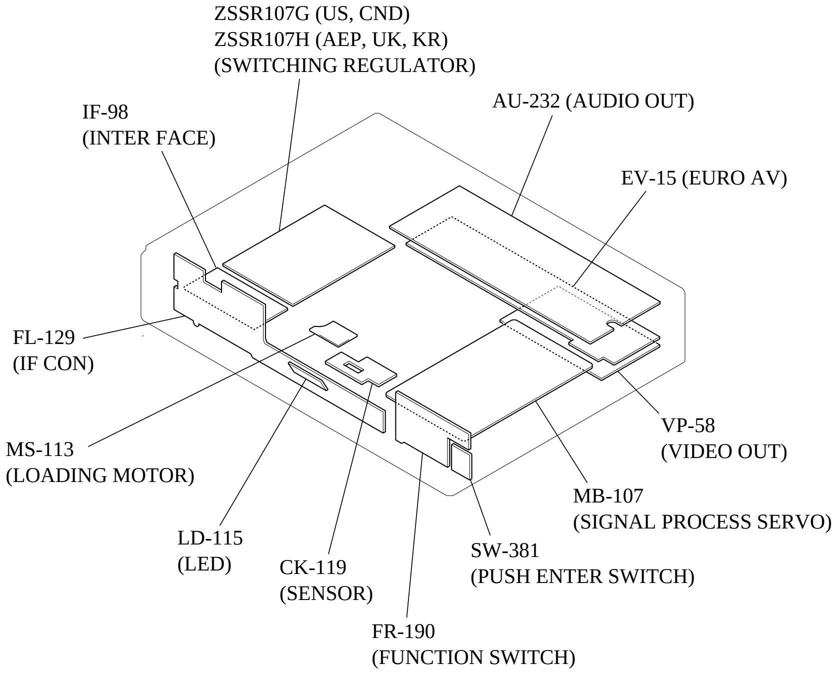
**– US, CND –**

🄻🄵 : Uses unleaded solder.

There are a few cases that the part isn't mounted in this model is printed on this diagram.

ZSSR107G BOARD


CN102
1
2
CN101
R102
D406
RL101
F101
C101
L101
D108
R104
PC101
R106
C107
C105
C112
C114
RJ120
C102
R105
RJ108
D109
D102
C113
T101
L102
D104
D101
R103
IC101
C110
RJ103
D103
D107
C108
C109
D105
D106
C111
D503
IP501
C503
R503
S
D
G
R415
R416
E
C
B
R419
R403
R420
Q501
R405
R501
R502
R416
D502
Q403
Q405
IC401
L503
Q402
D405
C412
RJ115
R402
C411
C404
R401
C501
R417
R412
Q404
R418
RJ114
RJ113
RJ112
R413
RJ111
RJ110
RJ109
IP401
IP201
R303
C502
IC402
R407
R406
C408
C409
D303
R302
Q301
D501
L502
R410
R408
R301
D202
R202
Q201
Q401
C407
R201
IP402
RJ107
C403
D404
RJ106
C402
L403
C401
L401
C203
RJ105
RJ104
D401
C202
L203
C201
L201
RJ102
D201
C301
L301
L303
D302
C303
RJ101
D301
C302
RJ119
RJ117
RJ118
CN201
RJ116
12
13
05
1-468-686-
11

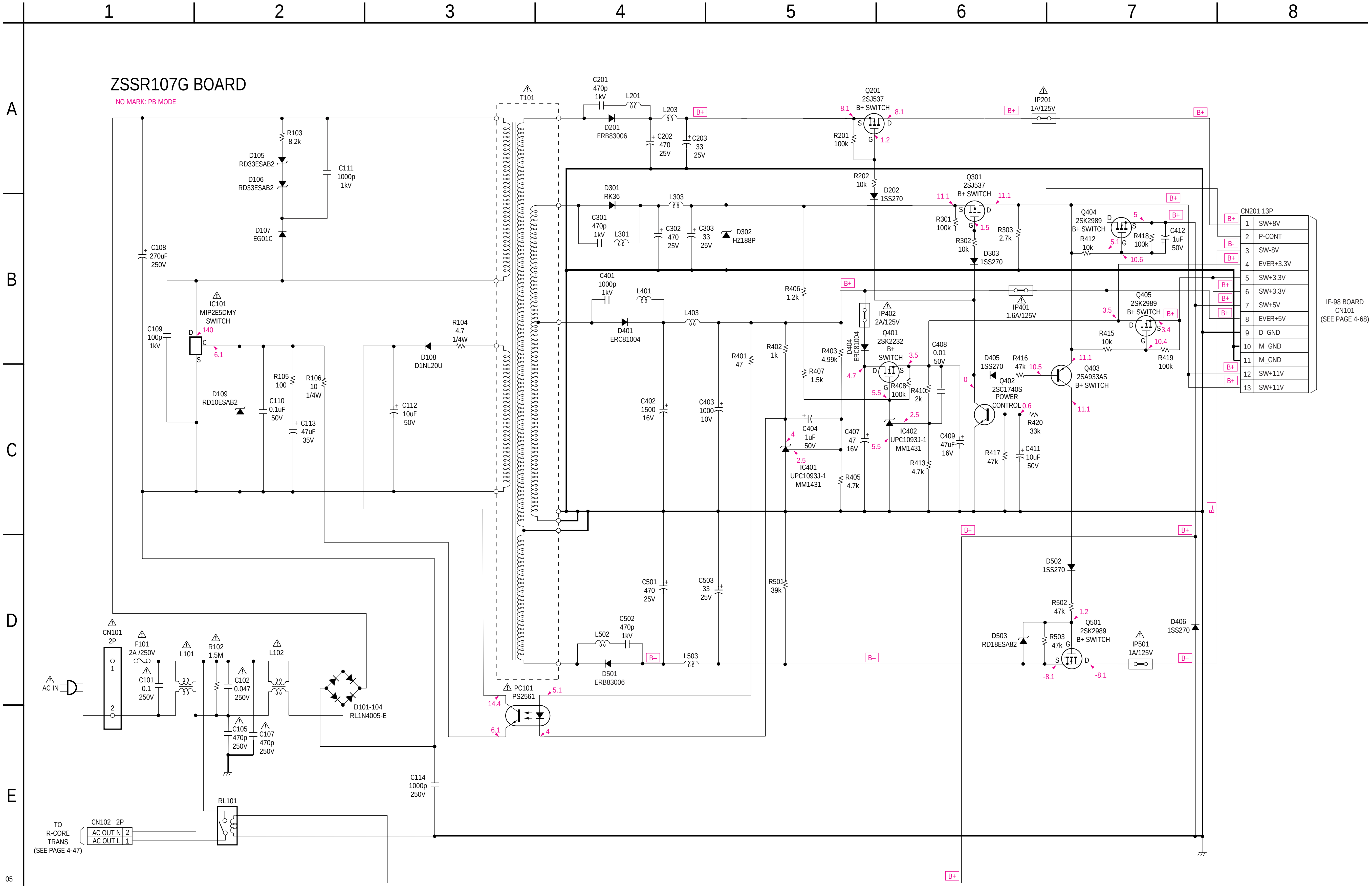

ZSSR107G (US, CND)
ZSSR107H (AEP, UK, KR)
(SWITCHING REGULATOR)
AU-232 (AUDIO OUT)
IF-98
(INTER FACE)
EV-15 (EURO AV)
FL-129
(IF CON)
MS-113
(LOADING MOTOR)
VP-58
(VIDEO OUT)
MB-107
(SIGNAL PROCESS SERVO)
LD-115
(LED)
CK-119
(SENSOR)
SW-381
(PUSH ENTER SWITCH)
FR-190
(FUNCTION SWITCH)

## ZSSR107G (SWITCHING REGULATOR) SCHEMATIC DIAGRAM

– Ref. No.: ZSSR107G board; 6,000 series –

**– US, CND –**

| | |
|---|---|
| The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.<br>Replace only with part number specified. | Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié. |


1
2
3
4
5
6
7
8
A
B
C
D
E
ZSSR107G BOARD
NO MARK: PB MODE
T101
C201 470p 1kV
L201
L203
D201 ERB83006
C202 470 25V
C203 33 25V
Q201 2SJ537 B+ SWITCH
8.1
8.1
1.2
R201 100k
IP201 1A/125V
B+
R103 8.2k
D105 RD33ESAB2
D106 RD33ESAB2
C111 1000p 1kV
D107 EG01C
C108 270uF 250V
R202 10k
D202 1SS270
Q301 2SJ537 B+ SWITCH
11.1
11.1
1.5
R301 100k
R302 10k
R303 2.7k
D303 1SS270
D301 RK36
C301 470p 1kV
L301
L303
C302 470 25V
C303 33 25V
D302 HZ188P
Q404 2SK2989 B+ SWITCH
5
5.1
10.6
R412 10k
R418 100k
C412 1uF 50V
CN201 13P
1 SW+8V
2 P-CONT
3 SW-8V
4 EVER+3.3V
5 SW+3.3V
6 SW+3.3V
7 SW+5V
8 EVER+5V
9 D GND
10 M_GND
11 M_GND
12 SW+11V
13 SW+11V
IF-98 BOARD CN101 (SEE PAGE 4-68)
B-
C401 1000p 1kV
L401
IC101 MIP2E5DMY SWITCH
140
6.1
C109 100p 1kV
D401 ERC81004
L403
R104 4.7 1/4W
D108 D1NL20U
R406 1.2k
IP402 2A/125V
IP401 1.6A/125V
Q405 2SK2989 B+ SWITCH
3.5
3.4
10.4
R415 10k
R419 100k
Q401 2SK2232 B+ SWITCH
3.5
4.7
5.5
R408 100k
R410 2k
D404 ERC81004
R403 4.99k
R402 1k
R401 47
R407 1.5k
C408 0.01 50V
D405 1SS270
R416 47k
10.5
0
11.1
Q403 2SA933AS B+ SWITCH
Q402 2SC1740S POWER CONTROL
0.6
R420 33k
11.1
R105 100
R106 10 1/4W
D109 RD10ESAB2
C110 0.1uF 50V
C113 47uF 35V
C112 10uF 50V
C402 1500 16V
C403 1000 10V
C404 1uF 50V
4
2.5
IC401 UPC1093J-1 MM1431
C407 47 16V
5.5
2.5
IC402 UPC1093J-1 MM1431
R405 4.7k
R413 4.7k
C409 47uF 16V
R417 47k
C411 10uF 50V
C501 470 25V
C503 33 25V
R501 39k
C502 470p 1kV
L502
D501 ERB83006
L503
D502 1SS270
R502 47k
1.2
Q501 2SK2989 B+ SWITCH
D503 RD18ESA82
R503 47k
-8.1
-8.1
IP501 1A/125V
D406 1SS270
CN101 2P
AC IN
F101 2A /250V
L101
R102 1.5M
L102
C101 0.1 250V
C102 0.047 250V
C105 470p 250V
C107 470p 250V
D101-104 RL1N4005-E
PC101 PS2561
14.4
5.1
6.1
4
C114 1000p 250V
RL101
TO R-CORE TRANS (SEE PAGE 4-47)
CN102 2P
AC OUT N 2
AC OUT L 1
05

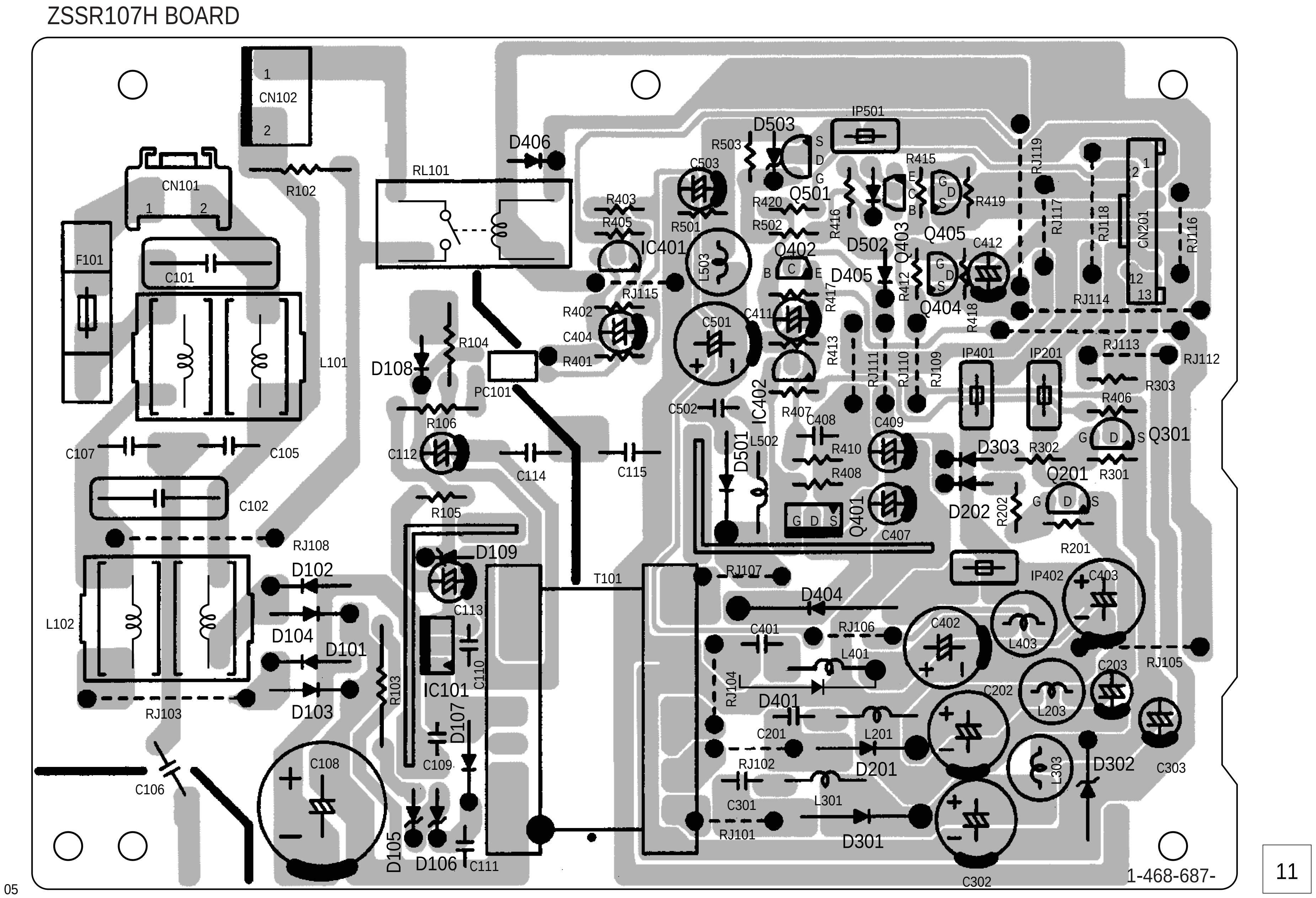
There are a few cases that the part isn't mounted in this model is printed on this diagram.

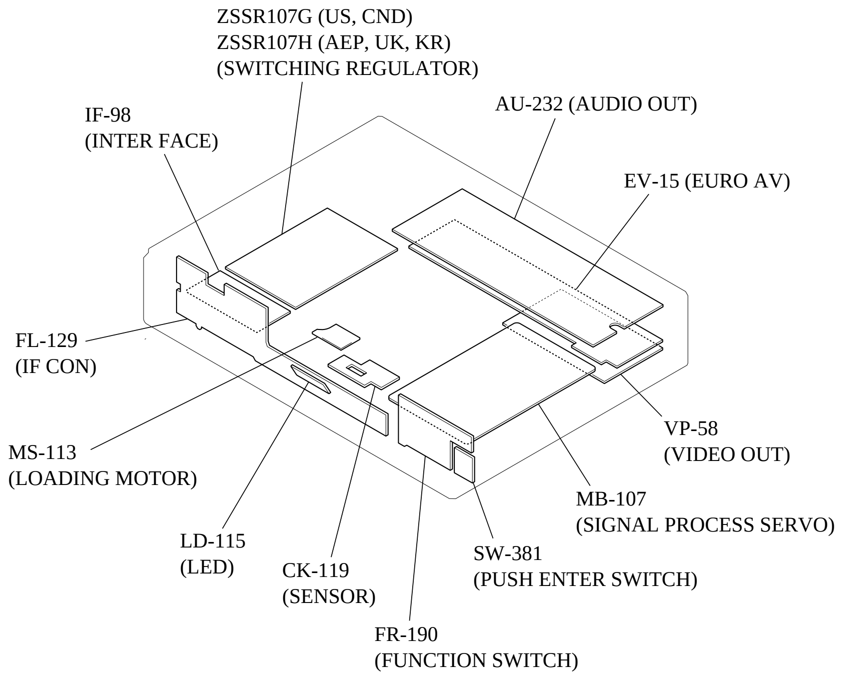
## ZSSR107H (SWITCHING REGULATOR) PRINTED WIRING BOARD

– Ref. No.: ZSSR107H board; 7,000 series –

**– AEP, UK, KR –**

: Uses unleaded solder.


ZSSR107H BOARD
CN102
1
2
CN101
1
2
R102
RL101
D406
D503
IP501
R503
C503
S
D
G
R415
E
C
B
G
D
S
Q501
R419
R403
R405
R420
R416
R501
R502
IC401
L503
Q402
C
B
E
D502
Q403
Q405
C412
D405
R412
Q404
RJ119
RJ117
RJ118
CN201
RJ116
RJ114
RJ115
R402
C404
R401
C501
C411
R417
R413
R418
RJ111
RJ110
RJ109
IP401
IP201
RJ113
RJ112
R303
R406
Q301
F101
C101
L101
D108
R104
PC101
R106
C502
IC402
R407
C408
C409
L502
D501
R410
R408
D303
R302
Q201
R301
C107
C105
C112
C114
C115
C102
R105
G D S
Q401
C407
D202
R202
R201
RJ108
D109
D102
T101
RJ107
IP402
C403
D404
L102
C113
D104
D101
C401
RJ106
C402
L403
L401
C203
RJ105
R103
IC101
C110
RJ104
D401
C202
L203
RJ103
D103
D107
C201
L201
C108
C109
RJ102
D201
D302
C303
L303
C106
C301
L301
D105
D106
C111
RJ101
D301
C302
1-468-687-
11
05


ZSSR107G (US, CND)
ZSSR107H (AEP, UK, KR)
(SWITCHING REGULATOR)
AU-232 (AUDIO OUT)
IF-98
(INTER FACE)
EV-15 (EURO AV)
FL-129
(IF CON)
MS-113
(LOADING MOTOR)
VP-58
(VIDEO OUT)
MB-107
(SIGNAL PROCESS SERVO)
LD-115
(LED)
CK-119
(SENSOR)
SW-381
(PUSH ENTER SWITCH)
FR-190
(FUNCTION SWITCH)

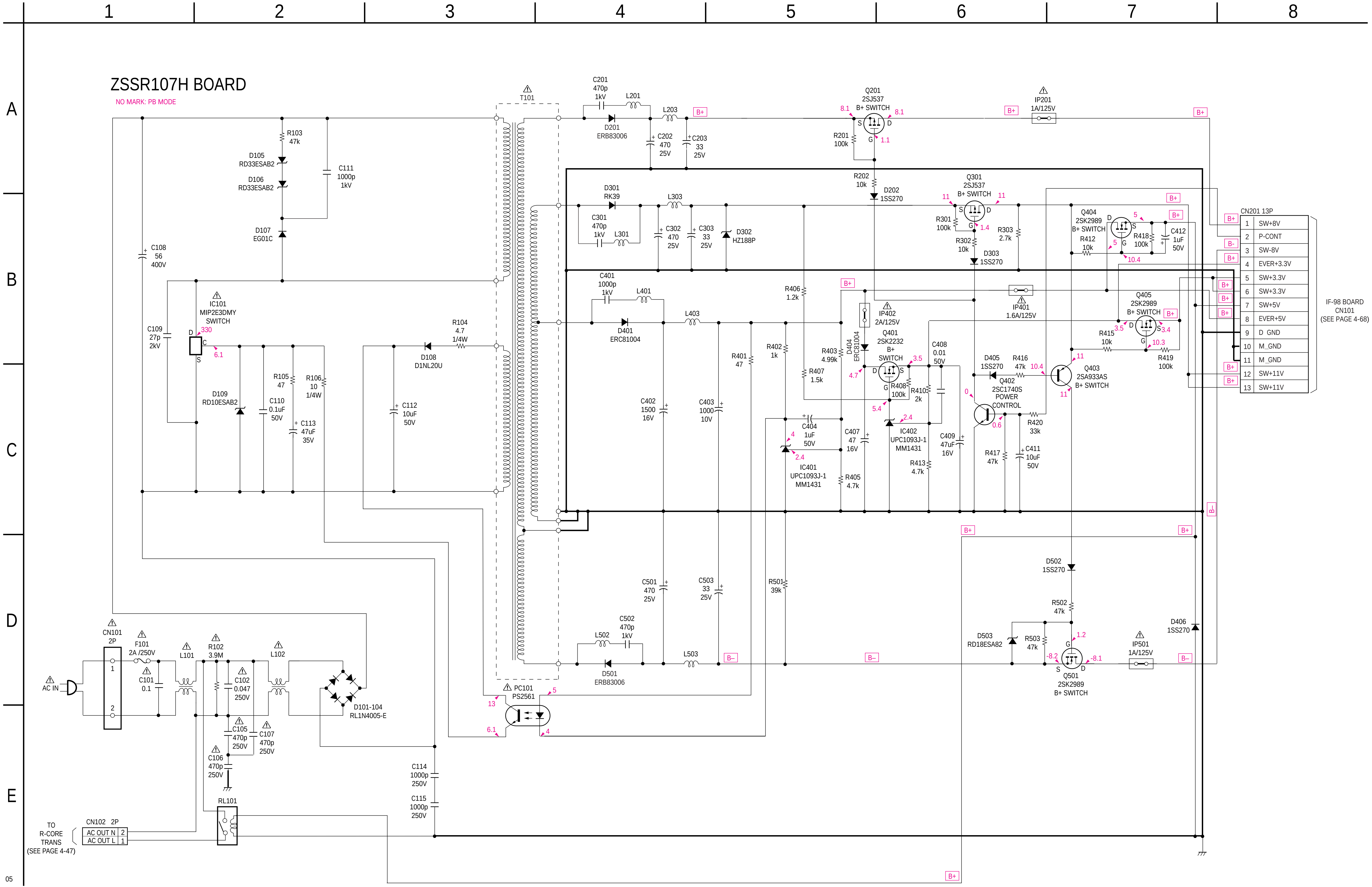
## ZSSR107H (SWITCHING REGULATOR) SCHEMATIC DIAGRAM

– Ref. No.: ZSSR107H board; 7,000 series –

**– AEP, UK, KR –**

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.


1
2
3
4
5
6
7
8
A
B
C
D
E
ZSSR107H BOARD
NO MARK: PB MODE
T101
C201 470p 1kV
L201
L203
D201 ERB83006
C202 470 25V
C203 33 25V
Q201 2SJ537 B+ SWITCH
8.1
8.1
1.1
R201 100k
IP201 1A/125V
R202 10k
D202 1SS270
R103 47k
D105 RD33ESAB2
D106 RD33ESAB2
C111 1000p 1kV
D107 EG01C
C108 56 400V
D301 RK39
L303
C301 470p 1kV
L301
C302 470 25V
C303 33 25V
D302 HZ188P
Q301 2SJ537 B+ SWITCH
11
11
1.4
R301 100k
R302 10k
R303 2.7k
D303 1SS270
Q404 2SK2989 B+ SWITCH
R412 10k
R418 100k
C412 1uF 50V
10.4
5
5
CN201 13P
1 SW+8V
2 P-CONT
3 SW-8V
4 EVER+3.3V
5 SW+3.3V
6 SW+3.3V
7 SW+5V
8 EVER+5V
9 D GND
10 M_GND
11 M_GND
12 SW+11V
13 SW+11V
IF-98 BOARD CN101 (SEE PAGE 4-68)
IC101 MIP2E3DMY SWITCH
330
6.1
C109 27p 2kV
C401 1000p 1kV
L401
L403
D401 ERC81004
R104 4.7 1/4W
D108 D1NL20U
R406 1.2k
IP402 2A/125V
D404 ERC81004
IP401 1.6A/125V
Q405 2SK2989 B+ SWITCH
3.5
3.4
10.3
R415 10k
R419 100k
Q401 2SK2232 B+ SWITCH
3.5
4.7
R403 4.99k
R402 1k
R401 47
R407 1.5k
R408 100k
R410 2k
C408 0.01 50V
D405 1SS270
R416 47k
10.4
11
11
Q403 2SA933AS B+ SWITCH
Q402 2SC1740S POWER CONTROL
0
0.6
R420 33k
R105 47
R106 10 1/4W
D109 RD10ESAB2
C110 0.1uF 50V
C113 47uF 35V
C112 10uF 50V
C402 1500 16V
C403 1000 10V
C404 1uF 50V
4
2.4
5.4
2.4
IC401 UPC1093J-1 MM1431
C407 47 16V
IC402 UPC1093J-1 MM1431
R405 4.7k
R413 4.7k
C409 47uF 16V
R417 47k
C411 10uF 50V
C501 470 25V
C503 33 25V
R501 39k
D502 1SS270
R502 47k
C502 470p 1kV
L502
L503
D501 ERB83006
D503 RD18ESA82
R503 47k
1.2
-8.2
-8.1
Q501 2SK2989 B+ SWITCH
IP501 1A/125V
D406 1SS270
B+
B–
CN101 2P
F101 2A /250V
L101
R102 3.9M
L102
AC IN
C101 0.1
C102 0.047 250V
D101-104 RL1N4005-E
PC101 PS2561
13
5
6.1
4
C105 470p 250V
C107 470p 250V
C106 470p 250V
C114 1000p 250V
C115 1000p 250V
RL101
TO R-CORE TRANS (SEE PAGE 4-47)
CN102 2P
AC OUT N 2
AC OUT L 1
05

# SECTION 5
# IC PIN FUNCTION DESCRIPTION

## 5-1. SYSTEM CONTROL PIN FUNCTION (MB-107 BOARD IC104)

| Pin No. | Pin name | I/O | Function |
|---|---|---|---|
| 1-5 | HA17-HA21 | O | Address bus A17-A21 |
| 6 | HA22 | - | Not used |
| 7 | WP | O | I2C EEPROM write protect output |
| 8 | XSACS | O | SACD DEC Chip select signal output |
| 9 | AVCC | - | Power supply (+3.3 V) |
| 10 | AVRH | - | Reference power supply (+3.3 V) |
| 11 | AVSS | - | Ground |
| 12 | AN0 | I | Set of mode 0 |
| 13 | AN1 | I | Set of mode 1 |
| 14 | AN2 | I | Set of mode 2 |
| 15 | AN3 | I | Set of mode 3 (SCAN SELECT switch input) |
| 16 | INT0 | I | AV DEC Interrupt input |
| 17 | INT1 | I | ARP Interrupt input |
| 18 | INT2 | I | SDSP Interrupt input |
| 19 | INT3 | I | NAND FLASH I/F, EXTENSION I/O Interrupt input |
| 20 | INT4 | I | IF CON Interrupt input |
| 21 | INT5 | I | ADSP Interrupt input |
| 22 | INT6 | I | ADSP Interrupt input |
| 23 | INT7 | I | SACD DEC Interrupt input |
| 24 | VCC | - | Power supply (+3.3 V) |
| 25 | SI0 | I | Serial bus 0 (data input) |
| 26 | SO0 | O | Serial bus 0 (data output) |
| 27 | SC0 | O | Serial bus 0 (clock output) |
| 28 | SI1 | I | Serial bus 1 (data input) |
| 29 | SO1 | O | Serial bus 1 (data output) |
| 30 | SC1 | O | Serial bus 1 (clock output) |
| 31 | SI2 | I | Serial bus 2 (data input) |
| 32 | SO2 | O | Serial bus 2 (data output) |
| 33 | DVD/SACD | O | DVD/SACD Select signal output |
| 34 | VSS | - | Ground |
| 35 | XRST | O | System reset signal output |
| 36 | WIDE | O | WIDE Select signal output |
| 37 | RGBSEL | O | VIDEO Select signal output (AEP, UK model only) |
| 38 | SDA | I/O | I2C data input/output |
| 39 | SCL | O | I2C clock output |
| 40 | XSARST | O | SACD DEC Reset signal output |
| 41 | EUROV/Y | O | VIDEO Select signal output (AEP, UK model only) |
| 42 | DSEL | O | I/P select signal output |
| 43 | MD0 | I | Input of mode select 0 (fixed at “ H”) |
| 44 | MD1 | I | Input of mode select 1 (fixed at “ L”) |
| 45 | MD2 | I | Input of mode select 2 (fixed at “ L”) |
| 46 | DREQ0 | I | AV DEC DMA –REQ0 input |
| 47 | DACK0 | O | AV DEC DMA –ACK0 output |
| 48 | XDRVMUTE | O | Drive mute signal output |
| 49 | DREQ1 | I | AV DEC DMA –REQ1 input |
| 50 | DACK1 | O | AV DEC DMA –ACK1 output |
| 51 | XIFCS | O | IF CON Chip select signal output |
| 52 | VSS | - | Ground |
| 53 | X1 | O | Clock output (16.5 MHz) |
| 54 | X2 | I | Clock input (16.5 MHz) |
| 55 | VCC | - | Power supply (+3.3 V) |
| 56 | CKSW1 | I | Chuck Sensor input (Not used in this set) |
| 57 | OCSW1 | I | Tray Sensor input (Not used in this set) |
| 58 | CS0X | O | External ROM chip select signal output |
| 59 | CS1X | O | Extranal RAM chip select signal output |
| 60 | CS2X | O | AV DEC Chip select signal output |
| 61 | CS3X | O | AV DEC Chip select signal output |
| 62 | CS4X | O | ARP Chip select signal output |
| 63 | CS5X | O | SDSP Chip select signal output |
| 64 | VCCI | - | Power supply (+1.8 V) |
| 65 | CS6X | O | NAND FLASH I/F, EXTENSION I/O chip select signal output |
| 66 | CS7X | - | Not used |
| 67 | XWAIT | I | Wait signal input |
| 68 | BGRNTX | I | Test terminal (fixed at “H”) |
| 69 | BRQ | I | Test terminal (fixed at “L”) |
| 70 | XRD | O | Read enable signal output |
| 71 | XWRH | O | Upper byte write enable signal output |

| Pin No. | Pin name | I/O | Function |
|---|---|---|---|
| 72 | XWRL | O | Lower byte write enable signal output |
| 73 | NMIX | I | Non Maskable Interrupt input (fixed at “H”) |
| 74 | VCCI | - | Power supply (+1.8 V) |
| 75 | VSS | - | Ground |
| 76 | XFRRST | I | IF CON Reset signal input |
| 77 | CPUCK | O | CPU clock signal output |
| 78 | SMUTE | O | SACD mute signal output |
| 79 | XDACS | O | DAC (2ch, 6ch) chip select signal output |
| 80 | X38CS | O | ADSP chip select signal ouptut |
| 81 | 48/44.1K | O | PLL FS control signal output |
| 82 | XLDON | O | Laser diode mute signal output |
| 83 | MA_MUTE | O | Audio mute signal output |
| 84 | XSRWE | O | SRAM write enable signal output |
| 85-92 | HD0-HD7 | I/O | Data bus D0-D7 (16 bit only) |
| 93-100 | HD8-HD15 | I/O | Data bus D8-D15 (16 bit) , D0-D7 (8 bit) |
| 101 | VSS | - | Ground |
| 102-109 | HA0-HA7 | O | Address bus A00-A07 |
| 110 | VCC | - | Power supply (+3.3 V) |
| 111-118 | HA8-HA15 | O | Address bus A08-A15 |
| 119 | VSS | - | Ground |
| 120 | HA16 | O | Address bus A16 |

# SECTION 6
# TEST MODE

## 6-1. GENERAL DESCRIPTION

The Test Mode allows you to make diagnosis and adjustment easily using the remote commander and monitor TV. The instructions, diagnostic results, etc. are given on the on-screen display (OSD).

## 6-2. STARTING TEST MODE

Press the TOP MENU, CLEAR, I/⏻ keys on the remote commander in this order with the power of main unit in OFF status, and the Test Mode starts, then “DIAG START” will be displayed on the fluorescent display tube and the menu shown below will be displayed on the TV screen. At the bottom of menu screen, the model name and revision number are displayed. Last Off at the lower right of screen indicates the information code concerning the last power off.

To execute each function, select the desired menu and press its number on the remote commander.

To exit from the Test Mode, press the I/⏻ key.

```
         Test Mode Menu

0. Syscon Diagnosis
1. Drive Auto Adjustment
2. Drive Manual Operation
3. Mecha Aging
4. Emargency Hisory
5. Version Information
6. Video Level Adjustment
                Exit: Power Key
_
Model   :DPX-16xxxx
Revision:x.xxx     Last Off: xx
```

Power Off Information Code List

00 : Primary Power Off
01 : Power Off Request from SYSTEM CONTROL
02 : Power Off by Emergency Power Off Command from SYSTEM CONTROL
(if information is sent from SYSTEM CONTROL)
03 : IF CON Judged that SYSTEM CONTROL is Faulty
04 : Power Off from Diagnosis Mode of IF CON
05 : Forced Power Off by the User
06 : Power Off by Power Supply Voltage Monitor

## 6-3. SYSCON DIAGNOSIS

The same contents as board detail check by serial interface can be checked from the remote commander.

On the Test Mode Menu screen, press 0 key on the remote commander, and the following check menu will be displayed.

```
    ### Syscon Diagnosis ###
           Check Menu
0. Quit
1. All
2. Version
3. Peripheral
4. Servo
5. Supply
6. AV Decoder
7. Video
8. Audio
_
```

### 0. Quit

Quit the Syscon Diagnosis and return to the Test Mode Menu.

### 1. All

All items continuous check

This menu checks all diagnostic items continuously. Normally, all items are checked successively one after another automatically unless an error is found, but at a certain item that requires judgment through a visual check to the result, the following screen is displayed for the key entry.

```
    ### Syscon Diagnosis ###

         Diag All Check
         No. 2 Version

 2-3. ROM Check Sum
Check Sum = xxxx


Press NEXT Key to Continue
Press PREV Key to Repeat
_
```

For the ROM Check, the check sum calculated by the Syscon is output, and therefore you must compare it with the specified value for confirmation.

Following the message, press ⏭ key to go to the next item, or ⏮ key to repeat the same check again. To quit the diagnosis and return to the Check Menu screen, press ■ or ENTER key.

If an error occurred, the diagnosis is suspended and the error code is displayed as shown below.

```
    ### Syscon Diagnosis ###



 3-3. EEPROM Check
Error 03: EEPROM Write/Reed N
Address    : 00000001
Write Data : 2492
Read Data  : 2490
Press NEXT Key to Continue
Press PREV Key to Repeat
_
```

Press ■ key to quit the diagnosis, or ⏮ key to repeat the same item where an error occurred, or ⏭ key to continue the check from the item next to faulty item.

### Submenu

Selecting 2 and subsequent items calls the submenu screen of each item.
Indication of “—” in the submenu means the check is not supported with the model.
For example, if “5. Supply” is selected, the following submenu will be displayed.

```
    ### Syscon Diagnosis ###
           Check Menu
          No. 5 Supply
0. Quit
1. All
2. ARP Register Check
3. ARP to RAM Data Bus
4. ARP to RAM Address Bus
5. ARP RAM Check
_
```

## 0. Quit

Quit the submenu and return to the main menu.

## 1. All

All submenu items continuous check.
This menu checks 2 and subsequent items successively. At the item where visual check is required for judgment or an error occurred, the checking is suspended and the message is output for key entry. Normally, all items are checked successively one after another automatically unless an error is found.
Selecting 2 and subsequent items executes respective menus and outputs the results.
For the contents of each submenu, see “General Description of Checking Method” and “Check Items List”.

### General Description of Checking Method

## 2. Version

(2-2) Revision
ROM revision number is displayed.
Error: Not detected.
The revision number defined in the source file of ROM (IC106 or 107) is displayed with four digits.

(2-3) ROM Check Sum
Check sum is calculated.
Error: Not detected.
8-bit data are added up to the ROM (IC106 or 107) address 0x000F0000 to 0x002EFFFF, and the result is displayed with 4-digit hexadecimal number. Error is not detected. Compare the result with the specified value.

(2-4) Model Type
Model code is displayed.
Error: Not detected.
The model code read from the EEPROM is displayed with 2-digit hexadecimal number.

(2-5) Region
Region code is displayed.
Error: Not detected.
The region code determined from the model code is displayed.

(2-6) M't check
Error 22: region code discord.
Accordance between region codes, one is detected with model resistance and destination resistance, and the other is detected with region resistance, is check.
If an error is detected, the region code determined with region resistance is displayed at “write data” and the region code determined with model resistance and destination resistance is displayed at “read data”.

## 3. Peripheral

(3-2) EEPROM Check
Data write → read, and accord check
Error 03: EEPROM write/read discord.
0x9249, 0x2942 and 0x4294 are written to the address 0x00 to 0xFF of the EEPROM and then read for checking. Before writing, the data are saved, then after checking, they are written to restore the contents of EEPROM.

(3-3) Gate Array Check
Data write → read, and accord check
Error 02: Gate Array write/read discord
Data of 0x00 to 0xFF is written sequentialy to the address 0xF and then read for checking.

(3-4) NAND FLASH Check
Data delete → write → read, and accord check
Error 04: delete error
Error 05: write error
Error 06: read data discord
Error 21: more than ten blocks are defective
Deleting, writing and checking read data are executed to the zeroth block of Flash memory.
If any detective block is found, the address is displayed. When more than ten blocks are defective, it is considered as an error.

(3-5) SACD check
Device reset → internal organs RAM check
Error 50: Write and read data discord.

(3-6) VENC Check
Data write → read, and accord check
Error 52: Write and read data discord.
Accessing to the SYSCON may be defective.

(3-7) ——— (not support)

(3-8) EX RAM Check
Test Data write → read, and accord check
Error 02: The external RAM used in the system control is checked.

## 4. Servo

(4-2) Servo DSP Check
Data write → read, and accord check
Error 12: Read data discord
0x9249, 0x2942 and 0x4294 are written to the RAM address 0x602 of the Servo DSP and then read for checking.
Also, OPT type “1 LASER” or “2 LASER” is displayed.

(4-3) ——— (not support)

(4-4) RF Amp (SSI) W/R Check

Date write → read and accord check

Error 13: RF Amp resister write, and read data discord.

After 0x01 is shifted to register which can read and write RF Amp for 8 bit operation, if write and read data are discord once, the check is performed unsuccessfully.

There may be a single piece of hardware is defective, mounted imperfect or not mounted.

## 5. Supply

(5-2) ARP Register Check

Data write → read, and accord check

Error 08: ARP register write, and read data discord

Data 0x00 to 0xFF is written sequentially to the ARP TMAX register (address 0xC6) and then read for checking.

(5-3) ARP to RAM Data Bus

Data write → read, and accord check

Error 09: ARP ←→ RAM data bus error

Data 0x0001 to 0x8000 where one bit each is set to 1 are written to the address 0 of RAM (IC303) connected to the ARP (IC301) through the bus, then they are read and checked. In case of discord, written bit pattern and read data are displayed. If data where multiple bits are 1 are read, the bits concerned may touch each other. Further, if data where certain bit is always 1 or 0 regardless of written data, the line could be disconnected or shorted.

(5-4) ARP to RAM Address Bus

Data write → other address read discord check

Error 10: ARP ←→ RAM address bus error

Caution: Address and data display in case of an error is different from the display of other diagnosis (described later).

Before starting the test, all addresses of RAM (IC303) are cleared to 0x0000.

First, 0xA55A is written to the address 0x00000, and the address data are read and checked from addresses 0x00001 to 0x80000 while shifting 1 bit each. Next, the data at that address is cleared, and it is written to the address 0x00001, and read and checked in the same manner. This check is repeated up to the address 0x80000 while shifting the address data by 1 bit each.

If data other than 0 is read at the addresses except written address, an error is given because all addresses were already cleared to 0. In this check, the error display pattern is different from that of other diagnosis; read data, written address, and read address are displayed in this order. However, the message uses same template, and accordingly exchange Address and Data when reading. The following display, for example,

```
    ### Syscon Diagnosis ###




 5-4. ARP to RAM Address Bus
Error 10: ARP - RAM Address B
Address    : 0000A55A
Write Data : 00000000
Read Data  : 00080000
Press NEXT Key to Continue
Press PREV Key to Repeat
_
```

shows the data 0xA55A was read from address 0x00080000 though it was written to the address 0x00000000. This implies that these addresses are in the form of shadow. Also, if the read data is not 0xA55A, another error will be present.

(5-5) ARP RAM Check

Data write → read, and accord check

Error 11: ARP RAM read data discord

The program code data stored in ROM are copied to all areas of RAM (IC303) connected to the ARP (IC301) through the bus, then they are read and checked if they accord. If the detail check was selected initially, the data are written to all areas and read, then the same test is conducted once again with the data where all bits are inverted between 1 and 0. If discord is detected, faulty address, written data, and read data are displayed following the error code 11, and the test is suspended.

## 6. AV Decoder

(6-2) 1935 RAM

Data write → read, and accord check

Error 14: AVD RAM read data discord

The program code data stored in ROM (IC106 or 107) are copied to all areas of RAM (IC406) connected to the AVD (IC403) through the bus, then they are read and checked if they accord. Further, the same test is conducted once again with the data where all bits are inverted between 1 and 0. If discord is detected, faulty address, written data, and read data are displayed following the error code 14, and the test is suspended.

During the test, OSD display becomes blank as the OSD area is also checked.

(6-3) 1935 SP

ROM → AVD RAM → Video OUT

Error: Not detected.

The data including sub picture streams in ROM (IC106 or IC107) are transferred to the RAM (IC406) in AVD (IC403), and output as video signals from the AVD (IC403).

Though OSD display becomes blank, the output of video signals continues until the key is pressed.

They are output from all video terminals (Composite, Y/C, Component) except EURO AV terminal.

## 7. Video

(7-2) Color Bar
AVD color bar command write → Video OUT
Error: Not detected.
The command is transferred to the AVD, and the color bar signals are output from video terminals.
They are output from all video terminals (Composite, Y/C, Component) except EURO AV terminal.

(7-3) Composite Out
AVD color bar command write → Video (Composite, Y/C) OUT
Error: Not detected.
The command is transferred to the AVD, and the color bar signals are output from video terminals.
They are output from all video terminals (Composite, Y/C, Component) except EURO AV terminal.

(7-4) Y/C Out
AVD color bar command write → Video (Composite Y/C) OUT
Error: Not detected.
The command is transferred to the AVD, and the color bar signals are output from video terminals.
They are output from all video terminals (Composite, Y/C, Component) except EURO AV terminal.

(7-5) RGB Out (AEP, UK Model)
EURO-AV RGB video output check
AVD color bar command write → Video (EURO-AV RGB) OUT
Error: Not detected.
With the RGB of video output turned on, the color bar signals are output from the EURO-AV terminal.

(7-6) ——— (not support)

(7-7) Euro AV Through (AEP, UK Model)
AV Through output On/Off
Error: Not detected.
AV Through output is turned on.

## 8. Audio

(8-2) ARP → 1935
Error 15 : ARP → 1935 video NG
16 : ARP → 1935 audio NG

(8-3) Audy
Register check of Audy (IC801) and DRAM (IC802) check are performed. After above checks are performed, transit to the next test tone (8-4).

(8-4) Test Tone
Test signal is output form AVD (IC403) to the digital out (optical) jack and analog audio out L/R jack through DSP (IC501) and Audy (IC801).
Error: Not detected
After outputting to the audio out jack, outputting to 5.1 CH output is performed.

Check Items List

2) Version
(2-2) Revision
(2-3) ROM Check Sum
(2-4) Model Type
(2-5) Region
(2-6) M’t Check

3) Peripheral
(3-2) EEPROM Check
(3-3) Gate Array Check
(3-4) NAND FLASH Check
(3-5) SACD Check
(3-6) VENC Check
(3-7) ——— (not support)
(3-8) EX RAM check

4) Servo
(4-2) Servo DSP Check
(4-3) ——— (not support)
(4-4) RF Amp (SSI) W/R Check

5) Supply
(5-2) ARP Register Check
(5-3) ARP to RAM Data Bus
(5-4) ARP to RAM Address Bus
(5-5) ARP RAM Check

6) AV Decoder
(6-2) 1935 RAM
(6-3) 1935 SP

7) Video
(7-2) Color Bar
(7-3) Composite Out
(7-4) Y/C Out
(7-5) RGB Out (AEP, UK Model)
(7-6) ——— (not support)
(7-7) Euro AV Through (AEP, UK Model)

8) Audio
(8-2) ARP → 1935
(8-3) Audy
(8-4) Test Tone

## Error Codes List

00: Error not detected
01: RAM write/read data discord
02: Gate array NG
03: EEPROM NG
04: Flash memory clear error
05: Flash memory write error
06: Flash memory read data discord
07: 2725 read data discord
08: ARP register read data discord
09: ARP ←→ RAM data bus error
10: ARP ←→ RAM address bus error
11: ARP RAM read data discord
12: Servo DSP NG
13: RF Amp NG
14: 1935 SDRAM NG
15: ARP → 1935 video NG
16: ARP → 1935 audio NG
19: 1901UCODE Download NG
1A: System call error (function not supported)
1B: System call error (parameter error)
1C: System call error (illegal ID number)
20: System call error (time out)
21: more than ten blocks of NAND FLASH memory are defective
22: Resistance incorrect mounting
50: SACD Decoder W/R NG
52: Video Encoder W/R NG
55: External RAM W/R NG
90: Error occurred
91: User verification NG
92: Diagnosis cancelled.

## 6-4. DRIVE AUTO ADJUSTMENT

DVD reference disc
  Single Layer
    HLX-503 (J-6090-069-A) (NTSC) OR
    HLX-504 (J-6090-088-A) (NTSC)
  Dual Layer
    HLX-501 (J-6090-071-A) (NTSC) OR
    HLX-505 (J-6090-089-A) (NTSC)

TEST CD
  YEDS-18 (3-702-101-01)

On the Test Mode Menu screen, press 1 key on the remote commander, and the drive auto adjustment menu will be displayed.

On the Test Mode Menu screen, press 1 key on the remote commander, and the drive auto adjustment menu will be displayed.

```
   ## Drive Auto Adjustment ##

         Adjustment Menu

0. ALL
1. DVD-SL
2. CD
3. DVD-DL
4. LCD

_
                  Exit: RETURN
```

Normally, 0 is selected to adjust DVD (single layer), CD, DVD (dual layer) in this order. But, individual items can be adjusted for the case where adjustment is suspended due to an error. In this mode, the adjustment can be made easily through the operation following the message displayed on the screen. Which disc is currently adjusted is displayed on the fluorescent display tube.
The disc used for adjustment must be the one specified for adjustment.

### 0. ALL

You will be asked if EEPROM data are initialized or not, and for this prompt, select 0 and press the ENTER key. First , the servo setting data in EEPROM, Emergency History and Hour Meter are cleared to initialize. Then, 1. DVD-SL disc, 2. CD disc, and 3. DVD-DL disc are adjusted in this order. Each time one disc was adjusted, it is ejected, and therefore exchange the disc following the message. You can exit the adjustment by pressing the ■ button. In adjusting each disc, the mirror time is measured to check the disk type. In the auto adjustment, whether the disc type is correct is not checked unlike conventional models, and accordingly, take care not to insert a different type of disc.

### 1. DVD-SL (single layer)

Select 1, insert DVD single layer disc, and press ENTER key, and the adjustment will be made through the following steps, then adjusted values will be written to the EEPROM.

DVD Single Layer Disc Adjustment Steps

1. Sled Reset
2. Disc Check Memory SL
3. Set Disc Type SL
4. Spdl Start
5. LD ON
6. Focus Error Check
7. Focus ON 0 with PI Level Musure
8. Auto Track Offset Adjust L0
9. Trv Level Check
10. Tracking ON
11. CLVA ON
12. Sled ON
13. Auto Focus Balance Adjust
14. Auto Loop Filter Offset Adjust
15. Auto Focus Gain Adjust L0
16. Auto Focus Balance Adjust L0
17. EQ Boost Adjust
18. Auto Loop Filter Offset Adjust
19. Auto Track Gain Adjust
20. RF Level Measure
21. Jitter Measure
22. Eep Copy Loop Filter Offset
23. All Servo Stop

## 2. CD

Select 2, insert CD disc, and press ENTER key, and the adjustment will be made through the following steps, then adjusted values will be written to the EEPROM.

CD Adjustment Steps

1. Sled Reset
2. Disc Check Memory CD
3. Set Disc Type CD
4. Spdl Start
5. LD ON
6. Focus Error Check
7. Fcs ON 0 with PI Level Mesure
8. Auto Track Offset Adjust L0
9. Trv Level Check
10. Tracking ON
11. CLVA ON
12. Sled ON
13. Auto focus Blance Adjust
14. Auto Loop Filter Offset Adjust
15. Auto Focus Gain Adjust L0
16. Auto Focus Balance Adjust L0
17. Eq Boost Adjust
18. Auto Loop Filter Offset Adjust
19. Auto Track Gain Adjust
20. Copy Adjustment Data to LCD
21. RF Level Measure
22. Jitter Measure
23. All Servo Stop

## 3. DVD-DL (dual layer)

Select 3, insert DVD dual layer disc, and press ENTER key, and the adjustment will be made through the following steps, then adjusted values will be written to the EEPROM.

DVD Dual Layer Disc Adjustment Steps

1. Sled Reset
2. Disc Check Memory DL
3. Set Disc Type DL
   DVD DL Layer 1 Adjust
4. Spdl Start
5. LD ON
6. Fcs ON 1 with PI Level Mesure
7. Auto Track Offset Adjust L1
8. Tracking ON
9. Clva ON
10. Sled ON
11. Auto Focus Balance Adjust
12. Auto Focus Gain Adjust L1
13. Auto Focus Balance Adjust L1
14. Eq Boost Adjust L1
15. Auto Track Gain Adjust L1
16. Jitter Measure
    DVD DL Layer 0 Adjust
17. Focus Jump (L1 → L0)
18. Auto Track Offset Adjust L0
19. Tracking ON
20. Clva ON
21. Sled ON
22. Auto Focus Balance Adjust
23. Auto Focus Gain Adjust L0
24. Auto Focus Balance Adjust L0
25. Eq Boost Adjust L0
26. Auto Track Gain Adjust L0
27. Jitter Measure
28. All Servo Stop

## 4. LCD (SACD)

No adjustments, because the adjusted data of CD are reflected to LCD disc and the adjusted data of CD and DVD-DL are reflected to SACD (hybrid disc).

## 6-5. DRIVE MANUAL OPERATION

On the Test Mode Menu screen, select [2], and the manual operation menu will be displayed. For the manual operation, each servo on/off control and adjustment can be executed manually.

```
  ## Drive Manual Operation ##

         Operation Menu
1. Disc type
2. Servo Control
3. Track/Layer Jump
4. Manual Adjustment
5. Auto Adjustment
6. Memory Check

0. Disc Check Memory
_
                  Exit: RETURN
```

In using the manual operation menu, take care of the following points. These commands do not provide protection, thus requiring correct operation. The sector address or time code field is displayed when a disc is loaded.

1. Set correctly the disc type to be used on the Disc Type screen.
   The disc type must be set after a disc was loaded.
   The set disc type is cleared when the tray is opened.
2. After power ON, if the Drive Manual Operation was selected, first perform "Reset SLED TILT" by opening 1. Disc Type screen.
3. In case of an alarm, immediately press the [■] button to stop the servo operation, and turn the power OFF.

Basic operation (controllable from front panel or remote commander)

| | |
|---|---|
| [I/⏻] | Power OFF |
| [■] | Servo stop |
| [⏏] | Stop+Eject/Loading |
| [↶ RETURN] | Return to Operation Menu or Test Mode Menu |
| [▶▶I], [I◀◀] | Transition between sub modes of menu |
| [1] to [9], [0] | Selection of menu items |
| Cursor [↓] / [↑] | Increase/Decrease in manually adjusted value |

### 0. Disc Check Memory

```
          Disc Check



1. SL Disc Check
2. CD Disc Check
3. DL Disc Check




0. Reset SLED TILT
```

On this screen, the mirror time is measured and written to the EEPROM to check the disc type. First, set a DVD SL disc and press [1], then set a CD disc and press [2], and finally set a DVD DL disc and press [3]. The measured mirror time is displayed respectively.
The adjustment must be executed more than once after default data were written.
From this screen, you can go to another mode by pressing [▶▶I] or [I◀◀] key, but you cannot enter this mode from another mode. You can enter this mode from the Operation Menu screen only.

### 1. Disc Type

```
          Disc Type
1. Disc Type Auto Check
2. DVD SL   12cm
3. DVD DL   12cm
4. CD       12cm
5. LCD      12cm
6. DVD SL   8cm
7. DVD DL   8cm
8. CD       8cm
9. LCD      8cm
0. Reset SLED TILT
_                        EMG. 00
  0. Reset SLED TILT
```

On this screen, select the disc type. To select the disc type, press the number of the loaded disc. The selected disc type is displayed at the bottom. Selecting [1] automatically selects and displays the disc type. In case of wrong display, retry "Disc Check Memory". Also, opening the tray causes the set disc type to be cleared. In this case, set the disc type again after loading.
In performing manual operation, the disc type must be set.
Once the disc type has been selected, the sector address or time code display field will appear as shown below. These values are displayed when PLL is locked.

```
          Disc Type
1. Disc Type Auto Check
2. DVD SL     12cm
3. DVD DL     12cm
4. CD         12cm
5. LCD        12cm
6. DVD SL      8cm
7. DVD DL      8cm
8. CD          8cm
9. LCD         8cm
0. Reset SLED TILT
        SA.------ SI.-- EMG.00
DVD SL 12cm
```

***Display when DVD SL 12cm disc was selected***

```
             Disc Type
1. Disc Type Auto Check
2. DVD SL     12cm
3. DVD DL     12cm
4. CD         12cm
5. LCD        12cm
6. DVD SL      8cm
7. DVD DL      8cm
8. CD          8cm
9. LCD         8cm
0. Reset SLED TILT
_            TC. --:--:-- EMG.00
CD           12cm
```

***Display when CD 12cm disc was selected***

| | |
|---|---|
| 0 Reset SLED TILT | Reset the Sled and Tilt to initial position.(This model does not have Tilt device, so reset only the Sled to initial position.) |
| 1 Disc Type Auto Check | Judge automatically the loaded disc. As the judged result is displayed at the bottom of screen, make sure that it is correct.<br>If Disc Check Memory menu has not been executed after EEPROM default setting, the disc type cannot be judged. In this case, return to the initial menu and make a check for three types of discs (SL, DL, CD). |
| 2 to 9 | Select the loaded disc. The adjusted value is written to the address of selected disc. No further entry is necessary if 1 was selected. |

## 2. Servo Control

```
          Servo Control
1. LD        Off R. Sled FWD
2. SP        Off L. Sled REV
3. Focus     Off
4. TRK.      Off
5. Sled      Off
6. CLVA      Off
7. FCS. Srch Off


0. Reset SLED TILT
       SA.------ SI.-- EMG. 00
DVD SL 12 cm
```

On this screen, the servo on/off control necessary for replay is executed. Normally, turn on each servo from 1 sequentially and when CLVA is turned on, the usual trace mode becomes active. In the trace mode, DVD sector address or CD time code is displayed. This is not displayed where the spindle is not locked.
The spindle could run overriding the control if the spindle system is faulty or RF is not present. In such a case, do not operate CLVA.

| | |
|---|---|
| 0 Reset SLED TILT | Reset the Sled and Tilt to initial position.(This model does not have Tilt device, so reset only the Sled to initial position.) |
| 1 LD | Turn ON/OFF the laser. |
| 2 SP | Turn ON/OFF the spindle. |
| 3 Focus | Search the focus and turn on the focus. |
| 4 TRK | Turn ON/OFF the tracking servo. |
| 5 Sled | Turn ON/OFF the sled servo.<br>If PLL is not locked (or can not be locked), the sled servo does not be turned ON. (Indication remains as OFF) |
| 6 CLVA | Turn ON/OFF normal servo of spindle servo. |
| 7 FCS. Srch | Apply same voltage as that of focus search to the focus drive to check the focus drive system. |
| → Sled FWD | Move the sled outward. Perform this operation with the tracking servo turned off. |
| ← Sled REV | Move the sled inward. Perform this operation with the tracking servo turned off. |

## 3. Track/Layer Jump

```
       Track/Layer Jump
1.   1Tj  FWD  R. Fj (L1 -> L0)
2.   1Tj  REV  L. Fj (L0 -> L1)
3.   2Tj  FWD  U. Lj (L1 -> L0)
4.   2Tj  REV  D. Lj (L0 -> L1)
5.   NTj  FWD
6.   NTj  REV
7. 500Tj  FWD
8. 500Tj  REV
9. 10k/20k FWD
0. 10k/20k REV
       SA.------ SI.-- EMG. 00
DVD SL 12 cm
```

On this screen, track jump, etc. can be performed. Only for the DVD-DL, the focus jump and layer jump are displayed in the right field.

| | |
|---|---|
| 1 1Tj FWD | 1-track jump forward. |
| 2 1Tj REV | 1-track jump reverse. |
| 3 2Tj FWD | 2-track jump forward. |
| 4 2Tj REV | 2-track jump reverse. |
| 5 NTj FWD | N-track jump forward. |
| 6 NTj REV | N-track jump reverse. |
| 7 500Tj FWD | Fine search forward. |
| 8 500Tj REV | Fine search reverse. |
| 9 10k/20k FWD | Direct search forward. |
| 0 10k/20k REV | Direct search reverse. |

– The following commands are valid for DVD-DL disc only –

| | |
|---|---|
| → Fj (L1 → L0) | Focus jump forward.<br>(Trk/Sled Servo OFF) |

| | |
|---|---|
| ← Fj (L0 → L1) | Focus jump reverse.<br>(Trk/Sled Servo OFF) |
| ↑ Lj (L1 → L0) | Layer jump forward.<br>(Trk/Sled Servo ON) |
| ↓ Lj (L0 → L1) | Layer jump reverse.<br>(Trk/Sled Servo ON) |

## 4. Manual Adjustment

```
    Manual Adjustment:Up/Down
1. TRK.   Offset
2. Focus  Gain
3. TRK.   Gain
4. Focus  Offset
5. Focus  Balance
6. L.F.   Offset
7. Analog FRSW
8. PLL Dac Gain
9. EQ     BOOST
0. GD     ADJ
     SA. ------ SI. -- EMG. 00
DVD SL 12cm            Jitter FF
```

On this screen, each item can be adjusted manually. Select the desired number 1 to 0 from the remote commander, and current setting for the selected item will be displayed, then increase or decrease numeric value with ↑ key or ↓ key. This value is stored in the EEPROM. If CLV has been applied, the jitter is displayed for reference for the adjustment.

| | |
|---|---|
| 1 TRK. Offset | Adjusts tracking offset. |
| 2 Focus Gain | Adjusts focus gain. |
| 3 TRK. Gain | Adjusts track gain. |
| 4 Focus Offset | Adjusts focus offset. |
| 5 Focus Balance | Adjusts focus balance. |
| 6 L.F. Offset | Adjusts loop filter offset. |
| 7 Analog FRSW | Sets the shifting switch for analog feedback circuit. |
| 8 PLL Dac Gain | Adjusts PLL D/A converter gain. |
| 9 EQ BOOST | Adjusts amount of boost of equalizer. |
| 0 GD ADJ | Adjusts amount of group delay |

## 5. Auto Adjustment

```
          Auto Adjustment
1. Auto TRK. Offset
2. Auto FCS Balance
3. Auto Focus Offset
4. Auto Focus Gain
5. Auto TRK. Gain
6. Auto EQ.
7. Auto L.F. Offset
8. Auto Group Delay


_       SA.------ SI.-- EMG. 00
DVD SL 12 cm
```

On this screen, each item can be adjusted automatically. Select the desired number 1 to 8 from the remote commander, and selected item is adjusted automatically.

| | |
|---|---|
| 1 Auto TRK. Offset | Adjusts tracking offset. |
| 2 Auto FCS Balance | Adjusts focus balance. |
| 3 Auto Focus Offset | Adjusts focus offset. |
| 4 Auto Focus Gain | Adjusts focus gain. |
| 5 Auto TRK. Gain | Adjusts track gain. |
| 6 Auto EQ | |
| 7 Auto L.F. Offset | Adjusts loop filter offset. |
| 8 Auto Group Delay | |

## 6. Memory Check

Display images are shown as follows, and all three screens are able to switch.

```
EEPROM Data 1          -- DL --
              CD LCD   SL  L0  L1
Focus Gain    xx xx    xx  xx  xx
TRK.  Gain    xx xx    xx  xx  xx
FCS Balance   xx xx    xx  xx  xx
Focus Bias    xx xx    xx  xx  xx
TRV.  Offset  xx xx    xx  xx  xx
L.F.  Offset  xx xx    xx  xx  xx
EQ.   Boost   xx xx    xx  xx  xx

_  UP    : Last Data
   DOWN  : Next Data
   CLEAR : Default Set  page.1/3
```

```
EEPROM Data 2          -- DL --
              CD LCD   SL  L0  L1
RF   Jitter   xx --    xx  xx  xx
RF   Level    xx --    xx  --  --
FE   Level    xx --    xx  --  --
FE Balance    xx --    xx  --  --
TRV. Level    xx --    xx  --  --
TE   Gain     xx xx    --  --  --
PI   Level    xx --    xx  xx  --

_  UP    : Prev Data
   DOWN  : Next Data
   CLEAR : Default Set  page.2/3
```

```
EEPROM Data 3          -- DL --
             CD LCD   SL  L0  L1
Analog FRSW  xx xx    xx  xx  xx
PLL Dac Gain xx xx    xx  xx  xx
Mirror Time  xx xx    xx  xx  xx

THR A&L:     xx xx xx/xx  xx  xx



_ UP    : PREV Data
  DOWN  : First Data
  CLEAR : Default Set  page.3/3
```

On this screen, current servo adjusted data stored in the EEPROM are displayed. The adjusted data are initialized by pressing the CLEAR key, but be careful that they are not recoverable after initialization.

Before clearing the adjusted data, make a note of the set data. This screen will also appear if 0 All is selected in the Drive Auto Adjustment. In this case, default setting cannot be made.

Data of “THR A & L” on page 3/3 can not be changed if default set is done.

## 6-6. MECHA AGING

```
      ### Mecha Aging ###




Press OPEN key
_



Abort: STOP key
```

On the Test Mode Menu screen, selecting 3 executes the aging of mechanism. First, open the tray and load a disc. Press the ▷ key, and the aging will start. During aging, the repeat cycle is displayed. Aging can be aborted at any time by pressing the ■ key. After the operation has stopped, unload the disc and press again the ■ key or the ↶ RETURN key to return to the Test Mode Menu.

## 6-7. EMERGENCY HISTORY

```
     ### EMG. History ###

Laser Hours      CD   xxh xxm
                 DVD  xxh xxm

 1.  00 00 00 00  00 00 00 00
     00 00 00 00  00 00 00 00

 2.  00 00 00 00  00 00 00 00
     00 00 00 00  00 00 00 00
_
Select: 1-9     Scroll:UP/DOWN
(1: Last EMG.)    Exit:RETURN
```

On the Test Mode Menu screen, selecting 4 displays the information such as servo emergency history. The history information from last 1 up to 10 can be scrolled with ↑ key or ↓ key. Also, specific information can be displayed by directly entering that number with ten keys.

The upper two lines display the laser ON total hours. Data below minutes are omitted.

### Clearing History Information

◎ Clearing laser hours
Press DISPLAY and CLEAR keys in this order.
Both CD and DVD data are cleared.

◎ Clearing emergency history
Press TOP MENU and CLEAR keys in this order.

◎ Initializing set up data
Press MENU and CLEAR keys in this order.
The data have been initialized when “Set Up Initialized” message is displayed. The EMG. History screen will be restored soon.

## 6-8. VERSION INFORMATION

```
    ## Version Information ##

 IF con.      Ver:x.xxx(xxxx)
        Group       xx

 SYScon.      Ver:x.xxx(xxxx)
        Model       xx
        Region      0x

  Servo DSP Ver: x.xxx
  AVD ucode Ver: xxxxxxxx
  OPT TYPE : x LASER
                   Exit : RETURN
```

The ROM version, region code, OPT type, etc. are displayed if 5 is selected in the Test Mode Menu.
The parenthesized hexadecimal number in the version number field indicates the checksum value of the ROM.

Note : After down loading ROM data, sometimes it happens that checksum is not the same as that of ROM data which has been down loaded. In such a case, go back to the menu and select “0. Syscon Diagnosis”, then select “1. All” in “2. Version”. If the result of this operation does not give an agreement, it must be either Down Load error or ROM error.

## 6-9. VIDEO LEVEL ADJUSTMENT

On the Test Mode Menu screen, selecting 6 displays color bars for video level adjustment. During display of color bars, OSD disappears but the menu screen will be restored if pressing any key.

## 6-10. IF CON SELF DIAGNOSTIC FUNCTION

### 1. FL-129 BOARD (IF CON) TEST MODE

The front board test mode is the IF CON self diagnostic mode. The IF CON can diagnose the functions of the front panel boards that the IF CON controls. Normally, the IF CON makes a serial communication with the SYSTEM CONTROL and operates following the commands from the SYSTEM CONTROL, but in the Test mode, the IF CON operates independently from the SYSTEM CONTROL.

In the Test mode, the following functions can be checked.

1. Button function
2. Remote commander receiving function
3. SYSTEM CONTROL-IF CON serial communication
4. Click shuttle function
5. Fluorescent display tube lighting check
   Grid check
   Anode check
6. LED control function
7. ACS function
8. Dimmer function

In the Test mode, the set operates same as usual, except voltage monitoring, communication monitoring, display of fluorescent display tube, and LED control.

1. The routine that monitors +3.3 V (P-CONT) of MB-107 board is not provided.
2. The monitoring timer for serial communication with the SYSTEM CONTROL is not provided. The set is not placed in the Standby mode, even if the communication with SYSTEM CONTROL is normal.
3. Display of fluorescent display tube (normally, display is made following the commands from SYSTEM CONTROL)
4. LED control (normally, control is made following the commands from SYSTEM CONTROL)

### 2. OPERATION OF SELF CHECK MODE

The Self Check mode is the function to conduct the basic test to the FL display and DVD panel section.

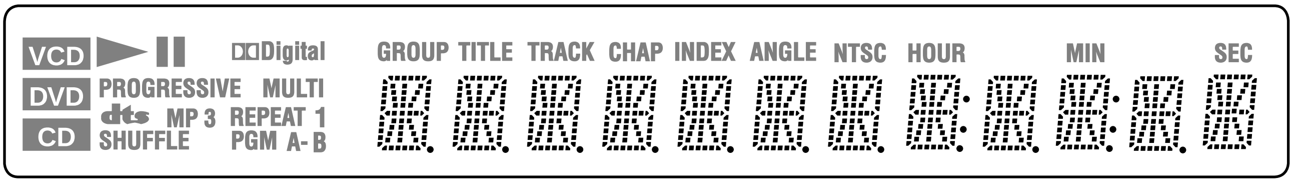
#### 2-1. Self Check Mode Transition Processing

At the AC Power ON after IF CON (IC203) was reset, the input to 10pin (SELF CHECK) is judged and if “Low” is entered, the main unit transits to the Self Check mode. In this port input judgment, the result of 3-time attempts must be same (assuming that the MB-107 board is not connected). While pressing the ■ key on the main unit with the IF CON in STANDBY mode, enter ↩ RETURN → DISPLAY (or SET UP) on the remote commander, and the unit transits to the Self Check Mode. The Self Check mode terminates when the IF CON transits to the STANDBY mode.

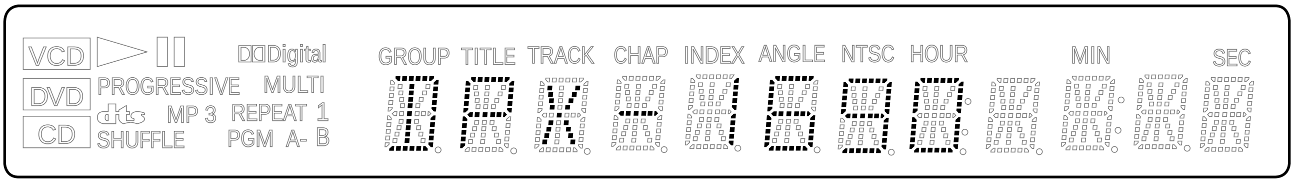
### 2-2. Operation of Auto Self Check

When the Self Check mode becomes active at the AC Power ON or by key input, the test display of the following steps (1) to (4) is repeated.

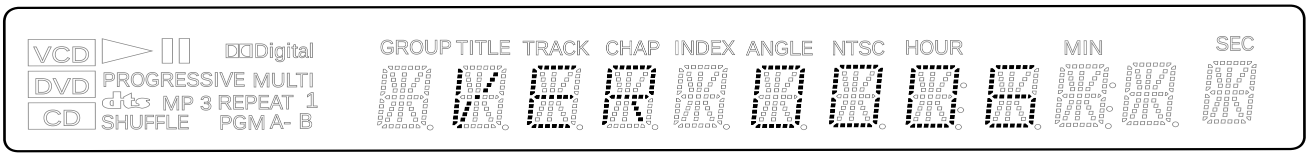
(1) FLD and LED all ON (for 5 seconds)


VCD
DVD
CD
PROGRESSIVE
dts
MP 3
SHUFFLE
Digital
MULTI
REPEAT 1
PGM A- B
GROUP
TITLE
TRACK
CHAP
INDEX
ANGLE
NTSC
HOUR
MIN
SEC

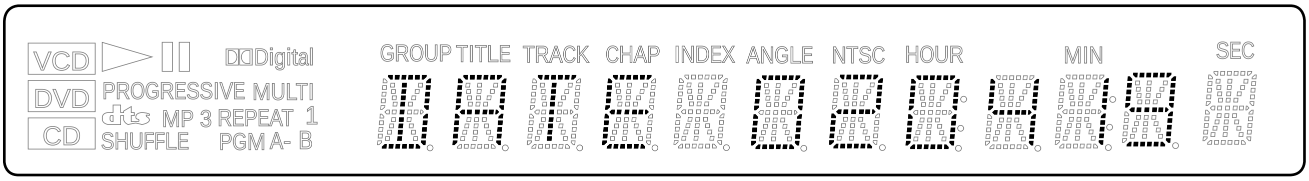
(2) MODEL display (for 2 seconds)


VCD
DVD
CD
PROGRESSIVE
dts
MP 3
SHUFFLE
Digital
MULTI
REPEAT 1
PGM A- B
GROUP
TITLE
TRACK
CHAP
INDEX
ANGLE
NTSC
HOUR
MIN
SEC

(3) Version display (for 2 seconds)


VCD
DVD
CD
PROGRESSIVE
dts
MP 3
SHUFFLE
Digital
MULTI
REPEAT 1
PGM A- B
GROUP
TITLE
TRACK
CHAP
INDEX
ANGLE
NTSC
HOUR
MIN
SEC

(4) ROM creation date display (for 2 seconds)


VCD
DVD
CD
PROGRESSIVE
dts
MP 3
SHUFFLE
Digital
MULTI
REPEAT 1
PGM A- B
GROUP
TITLE
TRACK
CHAP
INDEX
ANGLE
NTSC
HOUR
MIN
SEC

### 2-3. Each Self Check Function

Each Self Check function tests the FLD display, LED display, and key input.

| Input Voltage [V] | IC203: Pin No. (Signal) | | | | | | |
|---|---|---|---|---|---|---|---|
| | Pin ㉛ (AD1) | Pin ㉜ (AD2) | Pin ㉝ (AD3) | Pin ㉞ (AD4) | Pin ㉟ (AD5) | Pin ㊱ (AD6) | Pin ㊲ (CURSOR) |
| 0 – 0.2 | DVD1 | – | – | PLAY | OPEN/CLOSE | POWER | ENTER |
| 0.6 – 0.82 | DVD3 | – | – | PAUSE | – | – | – |
| 1.16 – 1.47 | DVD2 | – | – | STOP | – | – | – |
| 1.8 – 2.12 | DVD1 | – | – | – | – | – | – |
| 2.48 – 2.7 | DVD1 | – | – | – | – | – | – |
| 3.3 | – | – | – | – | – | – | – |

### 2-3-1. FLD and LED All ON

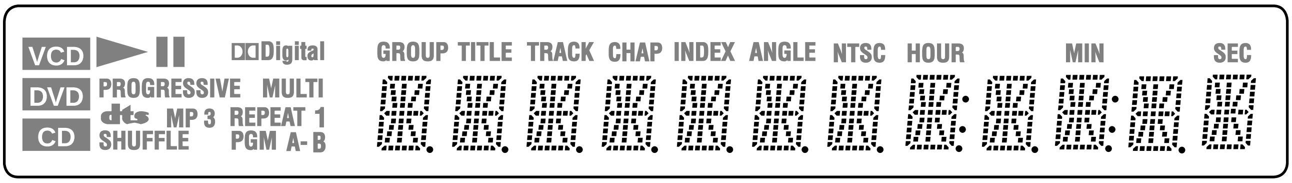
### 2-3-1-1. Transition Keys in Self Check Mode

- ■ key and ⏏ key on the main unit
- ← key on the remote commander

### 2-3-1-2. Operation and Display

In this mode, all LEDs except STANDBY LED and all segments of FLD turn ON.

Example of FLD all ON


VCD
DVD
CD
Digital
PROGRESSIVE
MULTI
dts
MP 3
REPEAT 1
SHUFFLE
PGM A- B
GROUP
TITLE
TRACK
CHAP
INDEX
ANGLE
NTSC
HOUR
MIN
SEC

### 2-3-2. Main Unit Key Name Display and Key Code Display

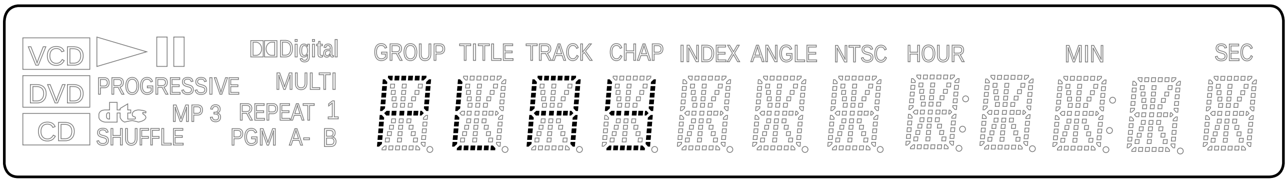
### 2-3-2-1. Transition Keys in Self Check Mode

- Keys on main unit except keys transited in self check

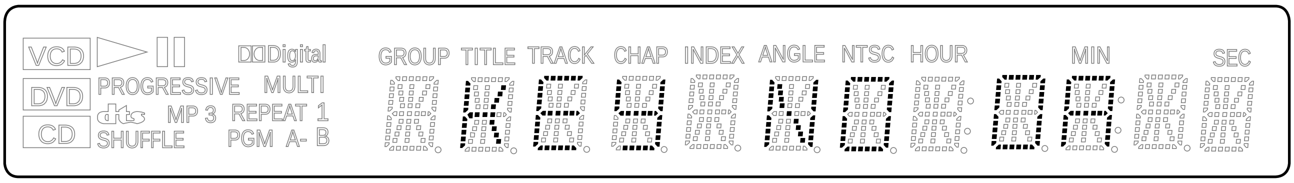
### 2-3-2-2. Operation and Display

When a key on the main unit is pressed in the Self Check mode, the name of that key is displayed on the FLD. Also, the key name display and the key code display can be switched with the DISPLAY key on the remote commander. “NOTHING” is displayed when nothing is entered. Also, VIDEO CD, DVD, and CD segments turn on when a communication error occurred.

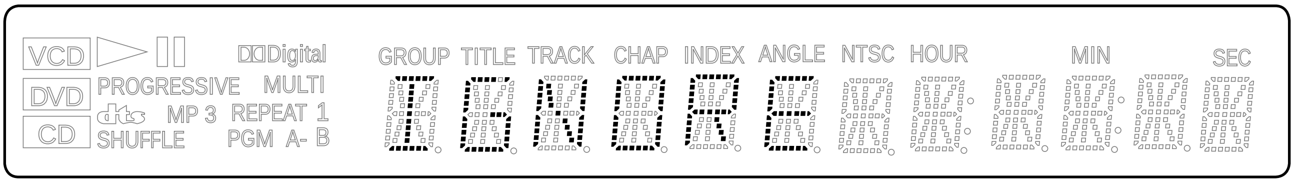
FLD display (at input of ▷ key on the main unit)


VCD
DVD
CD
Digital
PROGRESSIVE
MULTI
dts
MP 3
REPEAT 1
SHUFFLE
PGM A- B
GROUP
TITLE
TRACK
CHAP
INDEX
ANGLE
NTSC
HOUR
MIN
SEC
PLAY

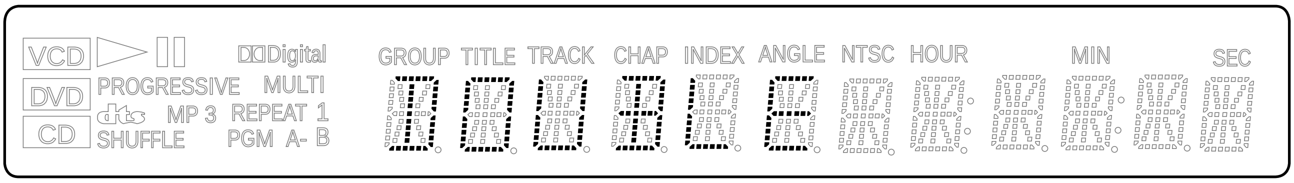
Key code display (at input of ▷ key, Key code: 0Ah)


VCD
DVD
CD
Digital
PROGRESSIVE
MULTI
dts
MP 3
REPEAT 1
SHUFFLE
PGM A- B
GROUP TITLE TRACK CHAP INDEX ANGLE NTSC HOUR MIN SEC
KEY NO 0A

At input of faulty voltage


VCD
DVD
CD
Digital
PROGRESSIVE
MULTI
dts
MP 3
REPEAT 1
SHUFFLE
PGM A- B
GROUP TITLE TRACK CHAP INDEX ANGLE NTSC HOUR MIN SEC
IGNORE

When two keys are pressed


VCD
DVD
CD
Digital
PROGRESSIVE
MULTI
dts
MP 3
REPEAT 1
SHUFFLE
PGM A- B
GROUP TITLE TRACK CHAP INDEX ANGLE NTSC HOUR MIN SEC
DOUBLE

### 2-3-3. Remote Commander Key Name Display and Key Code Display

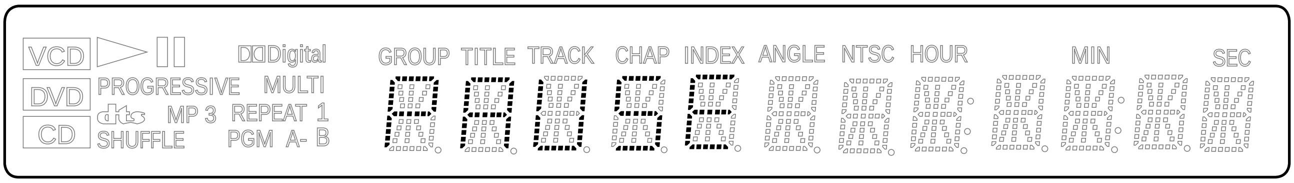
#### 2-3-3-1. Transition Keys in Self Check Mode

- Remote commander keys except keys transited in self check

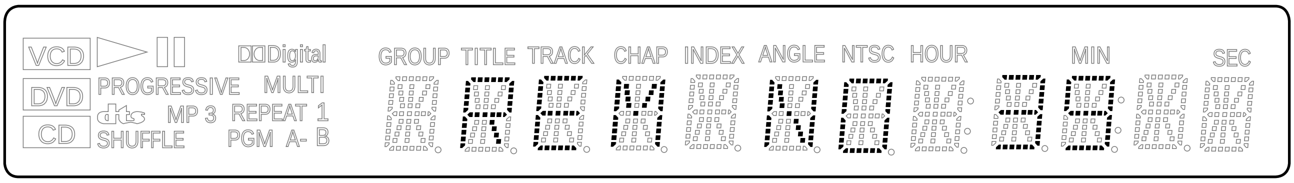
#### 2-3-3-2. Operation and Display

When a key on the remote commander is pressed in the Self Check mode, the name of that key is displayed on the FLD. Also, the key name display and the key code display can be switched with the DISPLAY key on the remote commander. “NOTHING” is displayed when nothing is entered. Also, VIDEO CD, DVD, and CD segments turn on when a communication error occurred.

Remote commander key name display (at input of ❚❚ key)


VCD
DVD
CD
Digital
PROGRESSIVE
MULTI
dts
MP 3
REPEAT 1
SHUFFLE
PGM A- B
GROUP TITLE TRACK CHAP INDEX ANGLE NTSC HOUR MIN SEC
PAUSE

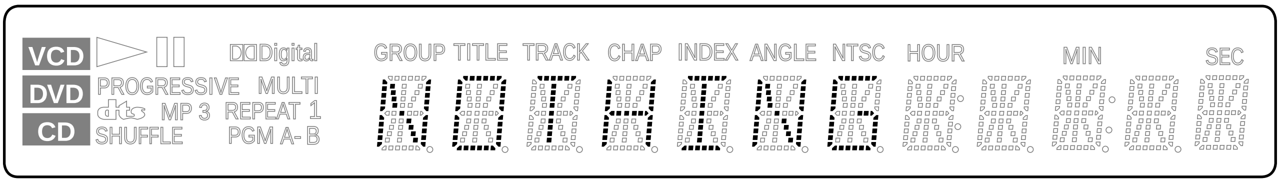
Remote commander key code display (at input of ❚❚ key, Key code: 39h)


VCD
DVD
CD
Digital
PROGRESSIVE
MULTI
dts
MP 3
REPEAT 1
SHUFFLE
PGM A- B
GROUP TITLE TRACK CHAP INDEX ANGLE NTSC HOUR MIN SEC
REM NO 39

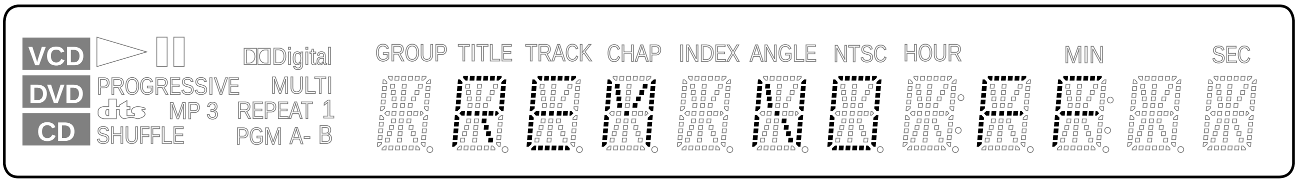
### 2-3-4. Communication Monitoring Display

The communication state is monitored and displayed while the key name on the main unit and the remote commander is displayed. When the communication to the System Controller failed, VIDEO CD, DVD, and CD segments turn on.

Communication error display (at no key input)


VCD
DVD
CD
Digital
PROGRESSIVE
MULTI
dts
MP 3
REPEAT 1
SHUFFLE
PGM A- B
GROUP
TITLE
TRACK
CHAP
INDEX
ANGLE
NTSC
HOUR
MIN
SEC

Communication error display (at code display without input of the remote commander)


VCD
DVD
CD
Digital
PROGRESSIVE
MULTI
dts
MP 3
REPEAT 1
SHUFFLE
PGM A- B
GROUP
TITLE
TRACK
CHAP
INDEX
ANGLE
NTSC
HOUR
MIN
SEC

### 2-3-5. FLD Anode Test Display and SHUTTLE Click Operation Test

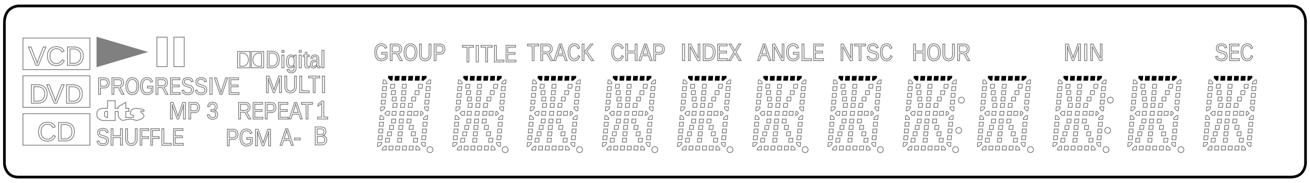
### 2-3-5-1. Transition Keys in Self Check Mode

- $\boxed{\rightarrow}$ on the remote commander
- SHUTTLE on the remote commander during Anode Test display

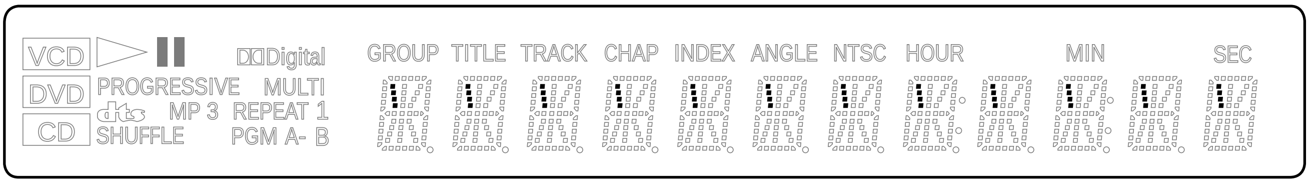
### 2-3-5-2. Operation and Display

The Self Check mode transits to this mode when $\boxed{\rightarrow}$ key is entered. Only the first segment of each grid of FLD turns on, and each time the SHUTTLE is entered, the segment of each grid is switched in order. When SHUTTLE input is clockwise, the segment switches in 1 → 2 → 3 direction, or counterclockwise it switches in 3 → 2 → 1 direction. This tests whether each segment turns on individually.

Display at the start of Anode Test


VCD
DVD
CD
Digital
PROGRESSIVE
MULTI
dts
MP 3
REPEAT 1
SHUFFLE
PGM A- B
GROUP
TITLE
TRACK
CHAP
INDEX
ANGLE
NTSC
HOUR
MIN
SEC

↓ (Input in CW direction)


VCD
DVD
CD
Digital
PROGRESSIVE
MULTI
dts
MP 3
REPEAT 1
SHUFFLE
PGM A- B
GROUP
TITLE
TRACK
CHAP
INDEX
ANGLE
NTSC
HOUR
MIN
SEC

### 2-3-6. FLD Grid Test Display and SHUTTLE Click Operation Test

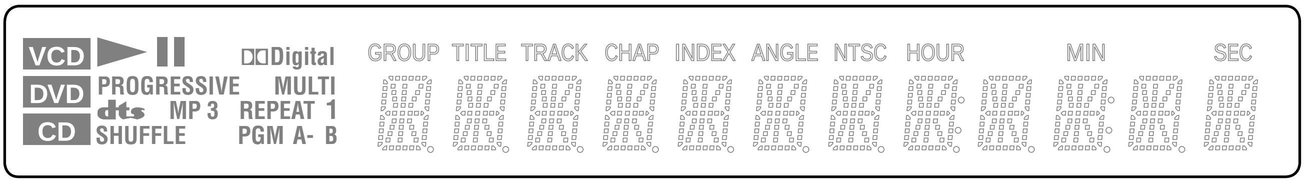
### 2-3-6-1. Transition Keys in Self Check Mode

- ↑ on the remote commander
- SHUTTLE on the remote commander during Grid Test display

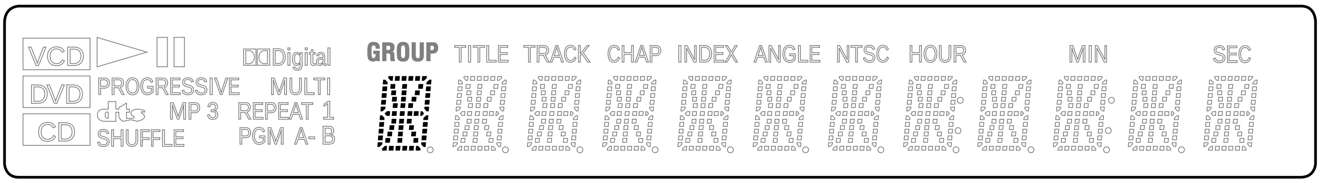
### 2-3-6-2. Operation and Display

The Self Check mode transits to this mode when ↑ key is entered. The first grid of FLD all turns on and other grids turn off. Each time the SHUTTLE is entered, the grid is switched in order. When SHUTTLE input is clockwise, the grid switches in 1 → 2 → 3 direction, or counterclockwise it switches in 3 → 2 → 1 direction. This tests whether each grid turns on individually.

Display at the start of Grid Test


VCD
DVD
CD
PROGRESSIVE
dts
MP 3
SHUFFLE
Digital
MULTI
REPEAT 1
PGM A- B
GROUP
TITLE
TRACK
CHAP
INDEX
ANGLE
NTSC
HOUR
MIN
SEC

↓ (Input in CW direction)


VCD
DVD
CD
PROGRESSIVE
dts
MP 3
SHUFFLE
Digital
MULTI
REPEAT 1
PGM A- B
GROUP
TITLE
TRACK
CHAP
INDEX
ANGLE
NTSC
HOUR
MIN
SEC

### 2-3-7. LED Test Display

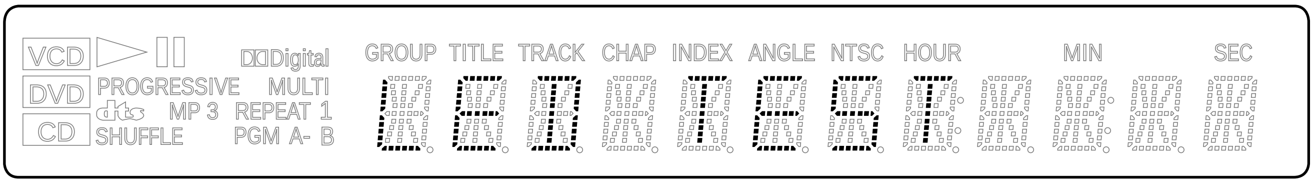
### 2-3-7-1. Transition Keys in Self Check Mode

- ↓ on the remote commander
- SHUTTLE on the remote commander during LED Test display

### 2-3-7-2. Operation and Display

LED is switched in order by the input of JOG/SHUTTLE. Also, LED ON/OFF is switched by the input of same key as the function that turns on the LED concerned.

FLD display during LED Test


VCD
DVD
CD
PROGRESSIVE
dts
MP 3
SHUFFLE
Digital
MULTI
REPEAT 1
PGM A- B
GROUP
TITLE
TRACK
CHAP
INDEX
ANGLE
NTSC
HOUR
MIN
SEC

### 2-3-8. ACS Test Display

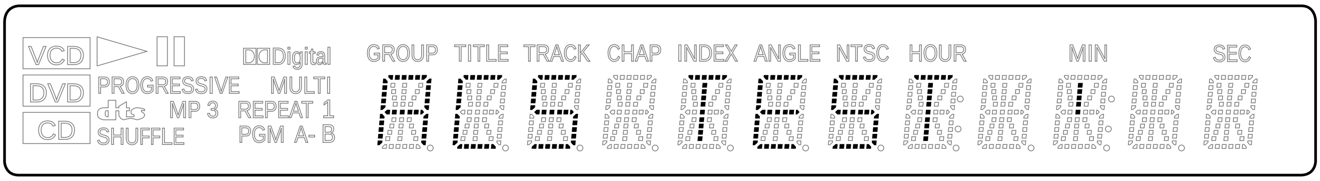
### 2-3-8-1. Transition Keys in Self Check Mode

- |◀◀/▶▶| dial on the main unit

### 2-3-8-2. Operation and Display

The self check mode is transited by pressing |◀◀/▶▶| dial. When |◀◀/▶▶| is rotated clockwise or counterclockwise, the displayed pattern is switched depending on the direction that the dial is rotated.

Display at the start of ACS Test


VCD
DVD
CD
PROGRESSIVE
dts
MP 3
SHUFFLE
Digital
MULTI
REPEAT 1
PGM A- B
GROUP
TITLE
TRACK
CHAP
INDEX
ANGLE
NTSC
HOUR
MIN
SEC

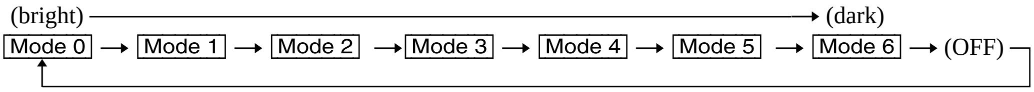
### 2-3-9. Dimmer Test Mode

### 2-3-9-1. Transition Keys in Self Check Mode

- ⏮/⏭ dial on the main unit

### 2-3-9-2. Operation and Display

The self check mode transits to the dimmer test mode when ⏮/⏭ dial is pressed more than 2 seconds. The indication is switched as follows when ⏮/⏭ dial is rotated.


(bright)
(dark)
Mode 0
Mode 1
Mode 2
Mode 3
Mode 4
Mode 5
Mode 6
(OFF)

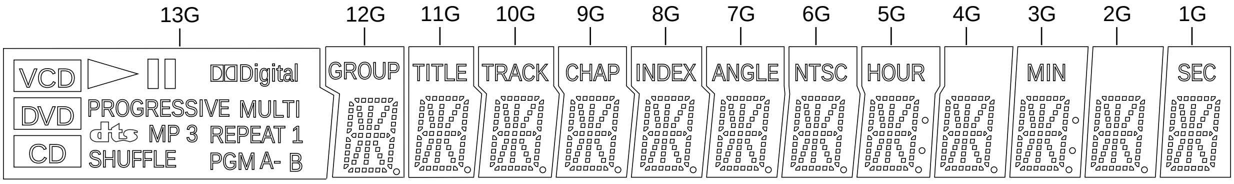
### 2-3-10. Beep Sound Test

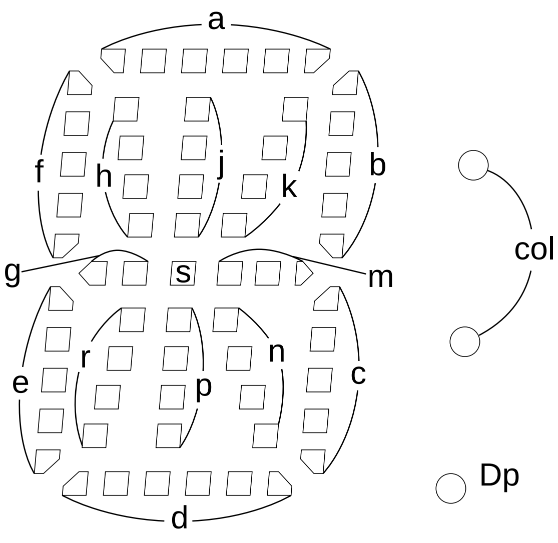
### 2-3-10-1. Transition Keys in Self Check Mode

- Input of a key on main unit

### 2-3-10-2. Operation and Display

In the Self Check mode, each time a key on the main unit is entered, a beep sound of 1kHz (100ms) is generated.


13G
12G
11G
10G
9G
8G
7G
6G
5G
4G
3G
2G
1G
VCD
DVD
CD
DD Digital
PROGRESSIVE
MULTI
dts
MP 3
REPEAT 1
SHUFFLE
PGM A- B
GROUP
TITLE
TRACK
CHAP
INDEX
ANGLE
NTSC
HOUR
MIN
SEC


a
f
h
j
k
b
col
g
s
m
e
r
p
n
c
Dp
d

( 12G~1G )

## ANODE CONNECTION

| | 13G | 12G | 11G | 10G | 9G | 8G | 7G | 6G | 5G | 4G | 3G | 2G | 1G |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P1 | ▷ | a | a | a | a | a | a | a | a | a | a | a | a |
| P2 | ▯▯ | h | h | h | h | h | h | h | h | h | h | h | h |
| P3 | — | j | j | j | j | j | j | j | j | j | j | j | j |
| P4 | DD Digital | k | k | k | k | k | k | k | k | k | k | k | k |
| P5 | PROGRESSIVE | b | b | b | b | b | b | b | b | b | b | b | b |
| P6 | — | f | f | f | f | f | f | f | f | f | f | f | f |
| P7 | MULTI | m | m | m | m | m | m | m | m | m | m | m | m |
| P8 | dts | s | s | s | s | s | s | s | s | s | s | s | s |
| P9 | MP 3 | g | g | g | g | g | g | g | g | g | g | g | g |
| P10 | REPEAT | e | e | e | e | e | e | e | e | e | e | e | e |
| P11 | 1 | n | n | n | n | n | n | n | n | n | n | n | n |
| P12 | SHUFFLE | p | p | p | p | p | p | p | p | p | p | p | p |
| P13 | PGM | r | r | r | r | r | r | r | r | r | r | r | r |
| P14 | A- | c | c | c | c | c | c | c | c | c | c | c | c |
| P15 | B | d | d | d | d | d | d | d | d | d | d | d | d |
| P16 | VCD | Dp | Dp | Dp | Dp | Dp | Dp | Dp | Dp | Dp | Dp | Dp | - |
| P17 | DVD | - | - | - | - | - | - | - | col | - | col | - | - |
| P18 | CD | GROUP | TITLE | TRACK | CHAP | INDEX | ANGLE | NTSC | HOUR | - | MIN | - | SEC |

# 6-11. TROUBLESHOOTING

## 6-11-1. Cannot Enter Test Mode

You cannot enter the Test mode when either button has been pressed by any reason with the board assembled in the front panel. In this state, the power does not turn on even under normal condition (the unit is kept in standby state), and also no button is active and the remote commander is not accepted. In this case, disconnect the MB-107 board and with the SELF CHECK (pin ⑩) of IF CON (IC203) on the FL-129 board kept in low state, supply AC, and the IF CON self-diagnosis mode will be forcibly activated. The IF CON (IC203) checks the SELF CHECK port only after the power on reset (only at AC supply, not in standby state). If any button is pressed, its name is displayed on the fluorescent display tube. But, if other than “NOTHING” is displayed though no button is pressed, it means that any button has been pressed.

## 6-11-2. Faults in Test Mode (MB-107 board)

### 1. The test mode menu is not displayed.

### 1-1. Board visual check

Check that the ICs of SYSCON (IC104), ROM (IC106 or IC107), AVD (IC403), ARP & SERVO (IC301) are working correctly.

Check that outside appearance of the ICs is normal.

Check that IC pins are not short-circuited.

Check that there is no soldering error.

Check that outside appearance of the capacitors and resistors is normal.

### 1-2. Power supply voltage check

Check the power voltage of the power connector (CN101).

Check the power voltage of SYSCON (IC104).

Check the power voltage of ROM (IC106 or IC107).

Check the power voltage of AVD (IC403).

Check the power voltage of ARP & SERVO (IC301).

If the power voltage has any abnormality →

Check that the power supply lines are not shorted.

Check that there is no soldering error.

If any abnormality cannot be found still →

Check that each IC is working normally.

### 1-3. Clock signal check

Measure the clock signal frequency at CPUCK (CL102) of SYSCON (IC104) with an oscilloscope.

If the 8.25 MHz signal appears. → Check the machine according to section 1-3-1

If the 33 MHz signal appears. → Check the machine according to section 1-3-2.

If other frequencies are output.

R106 and R107 have defective soldering, X101 crystal oscillator is defective.

If the measurement point is fixed to either “H” or “L”. →

Observe XFRRST (pin-(76)) of SYSCON (IC104) with an oscilloscope.

If the measurement point is “L”, check the following items.

If the IC has defective soldering, if the IC is short-circuited.

If the measurement point is “H”,

→ Component X101 or SYSCON (IC104) is defective.

### 1-3-1. When the 8.25 MHz signal appears at CPUCK

- Check the XRD, XWRH and CS0X signal.

Observe XRD (pin-(70)), XWRH (pin-(71)), and CS0X (pin-(58)) of SYSCON (IC104) with an oscilloscope.

If these pins are fixed to either “L” (0V) or “H” (3.3V), or if these pins stay in the center voltage, check the followings.

Check if the signal line does not have the defective soldering.

Check if the signal line is short-circuited with other signal lines.

If you cannot find any problem → SYSCON (IC104) is defective.

- HA [0 to 21] signal and HD [0 to 15] signal check

Observe HA [0 to 21] (pins-(102) to (109), (111) to (118), (120), ① to ⑤) of SYSCON (IC104) and HD [0 to 15] (pins-(85) to (100)) with an oscilloscope.

If these pins are fixed to either “L” (0V) or “H” (3.3V), or if the HA pin stays in the center voltage, check the followings. (HD stays in the center voltage when it is normal.)

→ Check if the signal line does not have the defective soldering, or is short-circuited with other signal line or SYSCON (IC104) is defective.

- Reset signal check

Check if XFRRST (pin-(76)) of SYSCON (IC104) normal or not.

The signal starts up at the same time as Vcc → Defective soldering.

If the trouble does not apply to any of the above-described phenomenon, SYSCON (IC104) or ROM (IC106 or IC107) is defective.

### 1-3-2. When the 33 MHz signal appears at CPUCK

- WAIT signal check

Observe XWAIT (pin-(67)) of SYSCON (IC104) with an oscilloscope.

If it is fixed to “L” (0V). → Observe CS2X to CS5X (pins-(60) to (63)).

If CS2X or CS3X is “L”. → AVD (IC403) has defective soldering or AVD is defective.

If CS4x or CS5X is “L”. → ARP & SERVO (IC301) has defective soldering or ARP & SERVO is defective.

If any one of the above is not “L”. → XWAIT or CSnX is short-circuited or has the defective soldering or AVD (IC403) is defective or ARP & SERVO (IC301) is defective.

Center voltage → The XWAIT line has defective soldering or is short-circuited or AVD (IC403) is defective or ARP & SERVO (IC301) is defective or SYSCON (IC104) is defective.

- CSnX signal check

Observe CS0X to CS5X (pins-(58) to (63)) of SYSCON (IC104) with an oscilloscope.

If they are fixed to “L” (0V) or if to center voltage → Check that the ICs do not have the defective soldering or is short-circuited with the other signal lines or SYSCON (IC104) is defective.

CS0X: ROM (IC106 or IC107)
CS2X, CS3X: AVD (IC403)
CS4X, CS5X: ARP & SERVO (IC301)

If the trouble symptom does not apply to any of the above phenomenon, SYSCON (IC104) or ROM (IC106 or IC107) is defective.

### 2. Test mode menu is displayed but the machine stops when menu is selected

### 2-1. AVD (IC403) check

Observe SDCLKO (pin-(127)) of AVD (IC403) with an oscilloscope.

95 MHz → No problem

27 MHz → Observe the XRST, HA, HD, XRD, XWRH INT and CS signal waveform at the respective pins of AVDEC, AVD (IC403) is defective.

If the signal is other than the above frequencies → AVD (IC403) 27MHz signal line (CLKI (pin-(158)), SCLKIN (pin-(160))) is short-circuited, IC mount is defective, AVD (IC403) is defective, PLL (IC103) is defective.

### 2-2. INT signal check

Observe INT0 to 2 (pins-⑯ to ⑱) of SYSCON (IC104) with an oscilloscope.

If they are fixed to “L” (0V) or fixed to the center voltage → Check that the ICs do not have the defective soldering, or are short-circuited, SYSCON (IC104) is defective, or the following ICs are not defective.

INT0: AVD (IC403)
INT1, INT2: ARP & SERVO (IC301)

### 2-3. If any abnormality cannot be confirmed by the above-described checks, check the CS signal that is currently output.

The CS signal other than CS0X is being output. → IC mount is defective or the IC is defective depending on the moving CS signal.

CS2X, CS3X: AVD (IC403)
CS4X, CS5X: ARP & SERVO (IC301)

If the trouble is not applicable to any of the above phenomenon, SYSCON (IC104) or ROM (IC106 or IC107) is defective.

### 3. If the message “SDSP No Ack” appears after the menu is displayed.

### 3-1. ARP & SERVO clock signal check

Check frequency of CLKIN (pin-(150))

33 MHz → Normal

Frequency other than 33 MHz → CLKIN is short-circuited or defective soldering or PLL (IC103) is defective or ARP & SERVO (IC301) is defective

### 3-2. ARP & SERVO (IC301) PLL oscillation check

Observe PLCKO (pin-(87)) of ARP & SERVO (IC301) with an oscilloscope.

If the pin is fixed to either “L” (0V) or “H” (3.3V).

If XRST if fixed to “L”. XRST has the defective soldering, In all other cases. ARP & SERVO (IC301) is defective

If it is oscillating.

HA [0 to 7] are HD [8 to 15] are short-circuited, check XSDSPIT and XSDSPCS or ARP & SERVO (IC301) is defective.

### 4. If trouble occurs at the specific item of the “Diag All Check”.

IC mount of the NG item is defective or IC is defective.

### 5. Picture and audio are not output.

Check connection of CN601

Check for the defective connection of flat cable and check of damage of the flat cable.

### 6. Picture is output but audio is not output.

Check the audio data output (at pins-㉔, ㉘, and ㉙) of AVD (IC403)

The audio data is not output. → AVD (IC403) or audio DAC (IC502, 503) mount is defective or power supply is defective or AVD (IC403) or audio DAC (IC502, 503) is defective.

PLL (IC103) 512fs output check

If the frequency or waveform has abnormality. → The signal line has defective soldering or the signal line is short-circuited with other signal lines or PLL (IC103) is defective.

### 7. Audio is output but picture is not output.

Observe pins-㊲, ㊳, ㊴, ㊷, ㊸ and ㊹ of VDAC (IC604) with an oscilloscope.

If the analog signal is not output. → The signal line has the defective soldering or is short-circuited or parts are defective or VDAC (IC604) is defective.

### 6-11-3. Drive Auto Adjustment stops due to error.

The ARP & SERVO (IC301) analog circuit of MB-107 board is defective or RF-Amp (IC201) or M-Driver (IC202) peripheral circuit is defective or optical pickup block is defective or flat cable connection is defective

### 6-11-4. The product itself is defective.

- If MB-107 does not have any problem,

The board other than MB-107 board is defective or connection is defective or optical pickup block is defective or mechanism deck is defective

**1. Power LED does not light in Red when the AC power is turned on.**

Check the SW-8V (pin-③), EVER+3.3V (pin-④), EVER+5 (pin-⑧) voltage of the power supply block CN201.
If voltage is abnormal. → The power supply block is defective.

**2. Power LED does not light in green after transmitting the POWER on command. It remains lighting in red (in the STANDBY mode).**

**2-1. Check the SW-8V (pin-③), EVER+3.3V (pin-④), EVER+5 (pin-⑧) voltage at CN201 of the power supply block/**

If voltage is abnormal. → The power supply block is defective.

**2-2. Check if the fuse on the power block has blown of not.**

If the fuse has blown → Replace the fuse.

**2-3. Check the P-CONT (pin-⑨) at CN201 of the FL-129 board when the POWER button is pressed.**

If it remains at “L”,
→ The signal line has the defective soldering or it is short-circuited with other signal lines or capacitor or resistor is defective or IFCON is defective or connection between the power supply block and the IF-98 board is defective, or connection between the IF-98 and the FL-129 board is defective, or connector installation is defective, or the power supply block is defective.

**2-4. Check if the button is kept depressed in the IFCON self mode.**

If the button is kept depressed. → The front panel is defective, or FL-129 board is defective.

**2-5. Check PONCHK (pin-㉚) of IFCON (IC203) on the FL-129 board.**

If it is 0.5 V or more. → The power supply is defective, or FL-129 board is defective.

**3. Power LED becomes red (STANDBY mode) in at once through Power LED lights in Green once when the POWER button is pressed.**

**3-1. Check CN201 voltage of the power supply block when the LED lights in green.**

If voltage is abnormal. → The power supply block is defective, or the FL-129 board is defective, or MB-107 is defective.

**3-2. Check XFRRST (pin-②) at CN103 on the MB-107 board.**

If it is fixed to “L”. → The signal line has defective soldering, or is short-circuited with other signal lines, or parts are defective.

**3-3. Check IFBSY (pin-③), XIFCS (pin-④), SI0 (pin-⑤), SO0 (pin-⑥) and SC0 (pin-⑦) at CN103**

If they are fixed to “H” or “L”.
→ The signal line has defective soldering, or is short-circuited with other signal line, or parts are defective, or SYSCON (IC104) is defective
If they change between “L/H”.
Connector installation is defective, or the FL-129 board is defective, or SYSCON (IC104) is defective.
If they stay in the center voltage.
Poor connection of flexible wiring board such as it is inserted in an angle diagonally, or defective soldering, or is short-circuited with other signal line.

**3-4. Check PONCHK (pin-㉚) of IFCON (IC203) on the FL-129 board.**

If rise-up time from 0.5 V to 1.5 V or more takes longer time, or it does not exceed 1.5 V or more. → The FL board is defective.

**4. The LED lights in green but the FL display does not light when the POWER button is pressed.**

Connection between the power supply block and the IF-98 board is defective, or connector installation is defective, or the FL-129 board is defective.

**5. Both picture and audio are not output.**

Connection between the power supply block and the IF-98 board is defective, or connection between the IF-98 board and the AU-232/VP-58/EV-15 board is defective, or connection between the AU-232/VP-58/EV-15 board and the MB-107 board is defective, or connector installation is defective, or AU-232/VP-58/EV-15 board is defective.

**6. Picture is not normal. (Block noise or others appear.)**

The MB-107 board AVD (IC403) or SDRAM (IC406) is defective, or ARP & SERVO (IC301) is defective.

# SECTION 7
# ELECTRICAL ADJUSTMENT

**In making adjustment, refer to 7-6. Adjustment Related Parts Arrangement.**

**Note:** During diagnostic check, the characters and color bars can be seen only with the NTSC monitor. Therefore, for diagnostic check, use the monitor that supports both NTSC and PAL modes.
Use the reference disc for PAL for check, and use the reference disc for NTSC for adjustment.

This section describes procedures and instructions necessary for adjusting electrical circuits in this set.

**Instruments required:**

1) Color monitor TV
2) Oscilloscope 1 or 2 phenomena, band width over 100 MHz, with delay mode
3) Frequency counter (over 8 digits)
4) Digital voltmeter
5) Standard commander (RMT-D150A/D150P)
6) DVD reference disc
   HLX-501 (J-6090-071-A) (dual layer) (NTSC)
   HLX-503 (J-6090-069-A) (single layer) (NTSC)
   HLX-504 (J-6090-088-A) (single layer) (NTSC)
   HLX-505 (J-6090-089-A) (dual layer) (NTSC)
   HLX-506 (J-6090-077-A) (single layer) (PAL)
   HLX-507 (J-6090-078-A)(dual layer) (PAL)
7) SACD reference disc
   HLXA-509 (J-6090-090-A)
8) Extention Cable (J-6090-107-A)

## 7-1. POWER SUPPLY CHECK

### 1. ZSSR107G Board : US, CND
### ZSSR107H Board : AEP, UK, KR

| | |
|---|---|
| Mode | E-E |
| Instrument | Digital voltmeter |
| EVER +3.3 V Check | |
| Test point | CN201 pin ④ |
| Specification | 3.6 ± 0.2 Vdc |
| SW +3.3 V Check | |
| Test point | CN201 pin ⑤, ⑥ |
| Specification | 3.4 ± 0.2 Vdc |
| SW+5 V Check | |
| Test point | CN201 pin ⑦ |
| Specification | 5.0 ± 0.2 Vdc |
| SW +11 V Check | |
| Test point | CN201 pin ⑫, ⑬ |
| Specification | 11.0 ± 1.0 Vdc |
| EVER +5 Check | |
| Test point | CN201 pin ⑧ |
| Specification | 5.1 ± 0.2 Vdc |
| SW –8 V Check | |
| Test point | CN201 pin ③ |
| Specification | –8.0 ± 0.5 Vdc |
| SW +8 V Check | |
| Test point | CN201 pin ① |
| Specification | 8.0 ± 0.5 Vdc |

**Checking method:**

1) Confirm that each voltage satisfies the specification.

* However, do not measure, it in VIDEO OFF mode.
Since power of the VIDEO board (VP-58, EV-15) is shut off in the VIDEO OFF mode, load is reduced and voltage is changed. Especially SW + 8V.

**! Caution**

Never touch the heat sink that is the primary part. It is feared that you may get an electric shock.

- Abbreviation
  CND : Canadian model
  KR : Korean model

## 7-2. ADJUSTMENT OF VIDEO SYSTEM

### 1. Composite Video Level Adjustment (MB-107 BOARD)

**<Purpose>**

This adjustment is made to satisfy the NTSC standard, and if not adjusted correctly, the brightness will be too large or small.

| | |
|---|---|
| Mode | Video level adjustment in test mode |
| Signal | Color bars |
| Test point | VIDEO OUT connector<br>(75 Ω terminated) |
| Instrument | Oscilloscope |
| Adjusting element | RV601 |
| Specification | $1.00^{+0.04}_{-0.02}$ Vp-p |

**Adjusting method:**

1) In the test mode initial menu “6” Video Level Adjustment, set so that color bars are generated.
2) Adjust the RV601 to attain $1.00^{+0.04}_{-0.02}$ Vp-p.

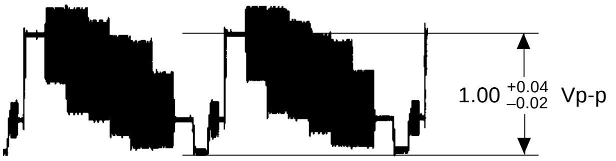


*Figure 7-1*

### 2. Component Video Level Adjustment (MB-107 BOARD)

**<Purpose>**

This adjustments component video output. If it is incorrect, correct brightness will not be attained when connected to, for instance, projector.

| | |
|---|---|
| Mode | Video level adjustment in test mode |
| Signal | Color bars |
| Test point | COMPONENT VIDEO OUT (Y)<br>connector (75 Ω terminated) |
| Instrument | Oscilloscope |
| Adjusting element | RV602 |
| Specification | $1.00^{+0.04}_{-0.02}$ Vp-p |

**Adjusting method:**

1) In the test mode initial menu “6” Video Level Adjustment, set so that color bars are generated.
2) Adjust the RV602 to attain $1.00^{+0.04}_{-0.02}$ Vp-p

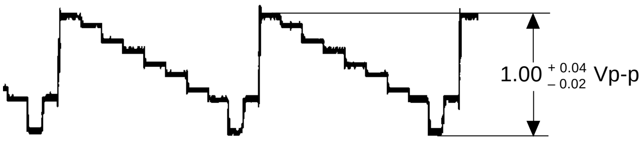


*Figure 7-2*

### 3. Checking S Video Output S-Y

**<Purpose>**

Check S-terminal video output. If it is incorrect, pictures will not be displayed correctly in spite of connection to the TV with a S-terminal cable.

| | |
|---|---|
| Mode | Video level adjustment in test mode |
| Signal | Color bars |
| Test point | S VIDEO OUT (S-Y) connector<br>(75 Ω terminated) |
| Instrument | Oscilloscope |
| Specification | 1.00 ± 0.05 Vp-p |

**Checking method:**

1) In the test mode initial menu “6” Video Level Adjustment, set so that color bars are generated.
2) Confirm that the S-Y level is 1.00 ± 0.05 Vp-p.

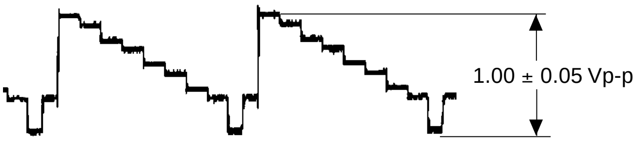


*Figure 7-3*

### 4. Checking S Video Output S-C

**<Purpose>**

This checks whether the S-C satisfies the NTSC/PAL Standard. If it is not correct, the colors will be too dark or light.

| | |
|---|---|
| Mode | Video level adjustment in test mode |
| Signal | Color bars |
| Test point | S VIDEO OUT (S-C) connector<br>(75 Ω terminated) |
| Instrument | Oscilloscope |
| Specification | A = 286 ± 30 mVp-p (NTSC)<br>A = 300 ± 100 mVp-p (PAL) |

**Checking method:**

1) In the test mode initial menu “6” Video Level Adjustment, set so that color bars are generated.
2) Confirm that the S-C burst is “A”.

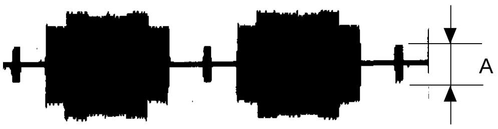


*Figure 7-4*

## 5. Checking Component Video Output Y

**<Purpose>**

This checks component video output Y. If it is incorrect, correct brightness will not be attained when connected to, for instance, projector.

| | |
|---|---|
| Mode | Video level adjustment in test mode |
| Signal | Color bars |
| Test point | COMPONENT VIDEO OUT (Y) connector (75 Ω terminated) |
| Instrument | Oscilloscope |
| Specification | 1.00 ± 0.05 Vp-p |

**Checking method:**

1) In the test mode initial menu “6” Video Level Adjustment, set so that color bars are generated.
2) Confirm that the Y level is 1.00 ± 0.05 Vp-p.

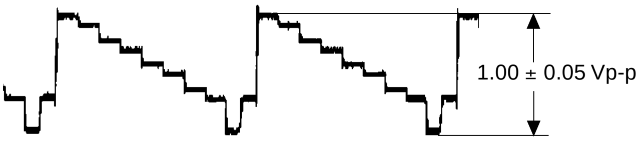


*Figure 7-5*

## 6. Checking Component Video Output B-Y

**<Purpose>**

This checks component video output B-Y. If it is incorrect, correct colors will not be displayed when connected to, for instance, projector.

| | |
|---|---|
| Mode | Video level adjustment in test mode |
| Signal | Color bars |
| Test point | COMPONENT VIDEO OUT ($P_B$/$C_B$) connector (75 Ω terminated) |
| Instrument | Oscilloscope |
| Specification | A = 648 ± 50 mVp-p<br>(For US, Canadian)<br>A = 700 ± 50 mVp-p (Others) |

**Checking method:**

1) In the test mode initial menu “6” Video Level Adjustment, set so that color bars are generated.
2) Confirm that the B-Y level is A.

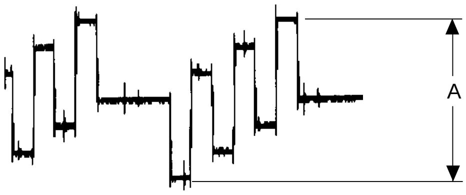


*Figure 7-6*

## 7. Checking Component Video Output R-Y

**<Purpose>**

This checks component video output R-Y. If it is incorrect, correct colors will not be displayed when connected to, for instance, projector.

| | |
|---|---|
| Mode | Video level adjustment in test mode |
| Signal | Color bars |
| Test point | COMPONENT VIDEO OUT ($P_R$/$C_R$) connector (75 Ω terminated) |
| Instrument | Oscilloscope |
| Specification | B = 648 ± 50 mVp-p<br>(For US, Canadian)<br>B = 700 ± 50 mVp-p (Others) |

**Checking method:**

1) In the test mode initial menu “6” Video Level Adjustment, set so that color bars are generated.
2) Confirm that the R-Y level is B.

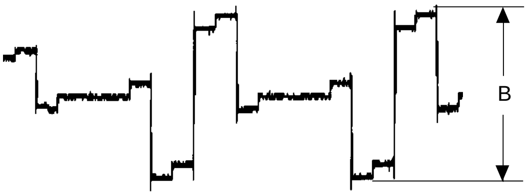


*Figure 7-7*

## 8. Checking RGB Output R (AEP, UK Model)

**<Purpose>**

This checks RGB output R. If it is incorrect, pictures will not be displayed correctly in spite of connection to the TV with an EURO AV connecting cord.

| | |
|---|---|
| Mode | Play |
| Signal | Check the Color-bar (100%) signal on DVD reference disc |
| Test point | LINE 1 (RGB)-TV connector pin ⑮ (75 Ω terminated) |
| Instrument | Oscilloscope |
| Specification | 700 ± 100 mVp-p |

**Checking method:**

1) In the test mode initial menu “6” Video Level Adjustment, set so that color bars are generated.
2) Confirm that the R level is 700 ± 50 mVp-p.

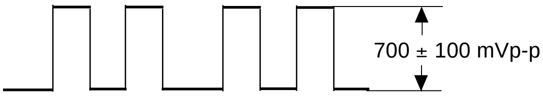


*Figure 7-8*

## 9. Checking RGB Output G (AEP, UK Model)

**<Purpose>**

This checks RGB output G. If it is incorrect, pictures will not be displayed correctly in spite of connection to the TV with an EURO AV connecting cord.

| Mode | Play |
|---|---|
| Signal | Check the Color-bar (100%) signal on DVD reference disc |
| Test point | LINE 1 (RGB)-TV connector pin ⑪ (75 Ω terminated) |
| Instrument | Oscilloscope |
| Specification | 700 ± 100 mVp-p |

**Checking method:**

1) In the test mode initial menu “6” Video Level Adjustment, set so that color bars are generated.
2) Confirm that the G level is 700 ± 100 mVp-p.

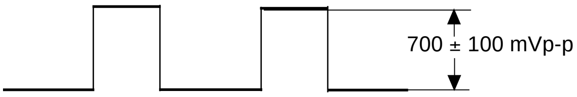


*Figure 7-9*

## 10. Checking RGB Output B (AEP, UK Model)

**<Purpose>**

This checks RGB output B. If it is incorrect, pictures will not be displayed correctly in spite of connection to the TV with an EURO AV connecting cord.

| Mode | Play |
|---|---|
| Signal | Check the Color-bar (100%) signal on DVD reference disc |
| Test point | LINE 1 (RGB)-TV connector pin ⑦ (75 Ω terminated) |
| Instrument | Oscilloscope |
| Specification | 700 ± 100 mVp-p |

**Checking method:**

1) In the test mode initial menu “6” Video Level Adjustment, set so that color bars are generated.
2) Confirm that the B level is 700 ± 100 mVp-p.

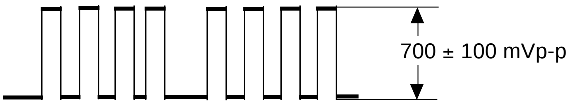
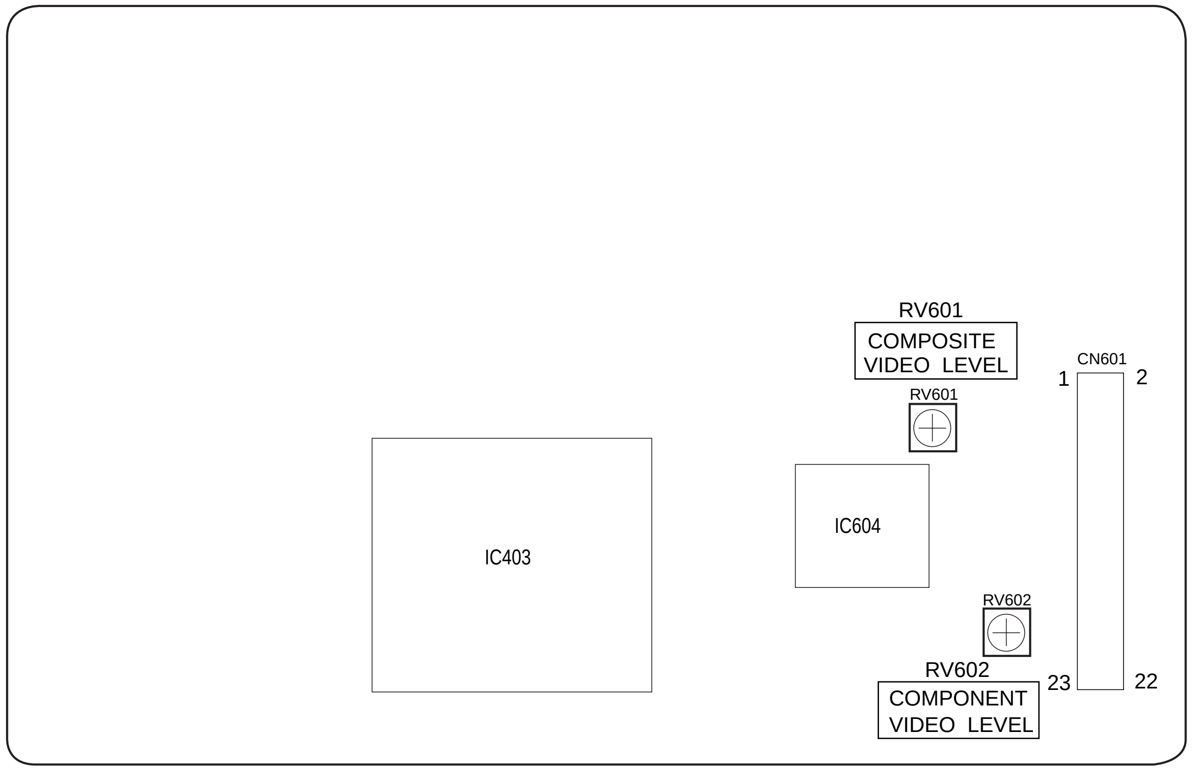


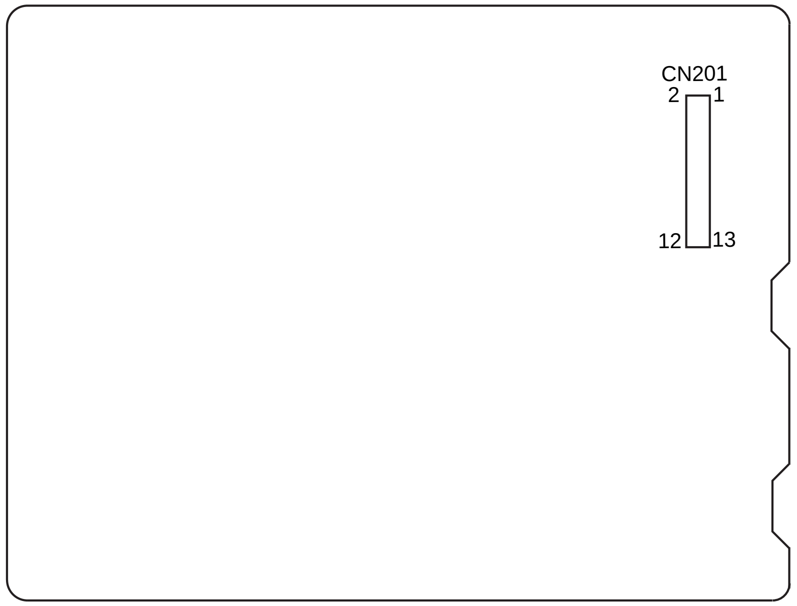
*Figure 7-10*

## 7-3. ADJUSTMENT RELATED PARTS ARRANGEMENT

### MB-107 BOARD (SIDE A)


RV601
COMPOSITE VIDEO LEVEL
RV601
CN601
1
2
IC403
IC604
RV602
RV602
COMPONENT VIDEO LEVEL
23
22

### ZSSR107G/ZSSR107H BOARD (SIDE B)


CN201
2
1
12
13

# SECTION 8
# REPAIR PARTS LIST

## 8-1. EXPLODED VIEWS

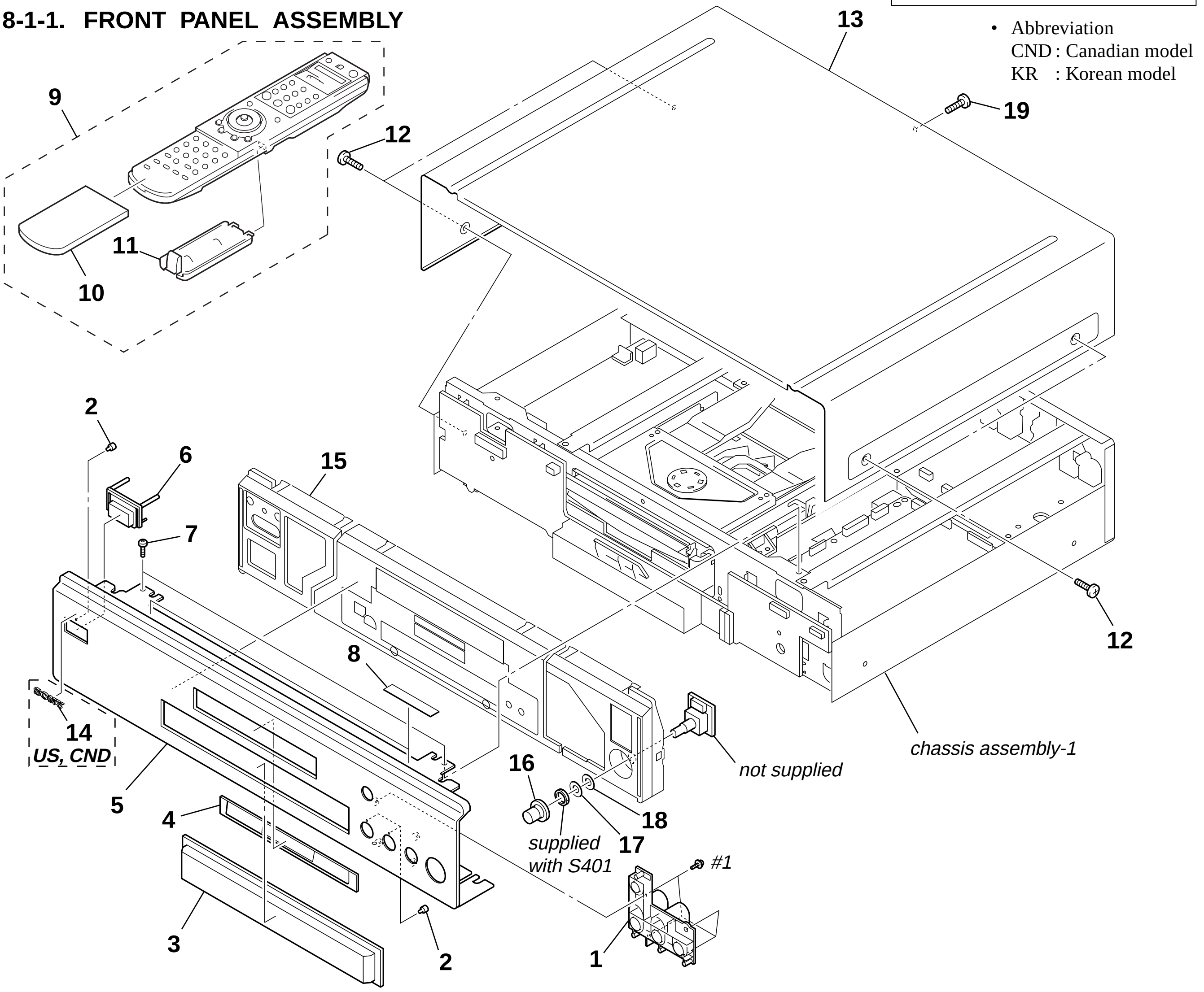
NOTE:
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Accessories and packing materials are given in the last of the electrical parts list.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiquens pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

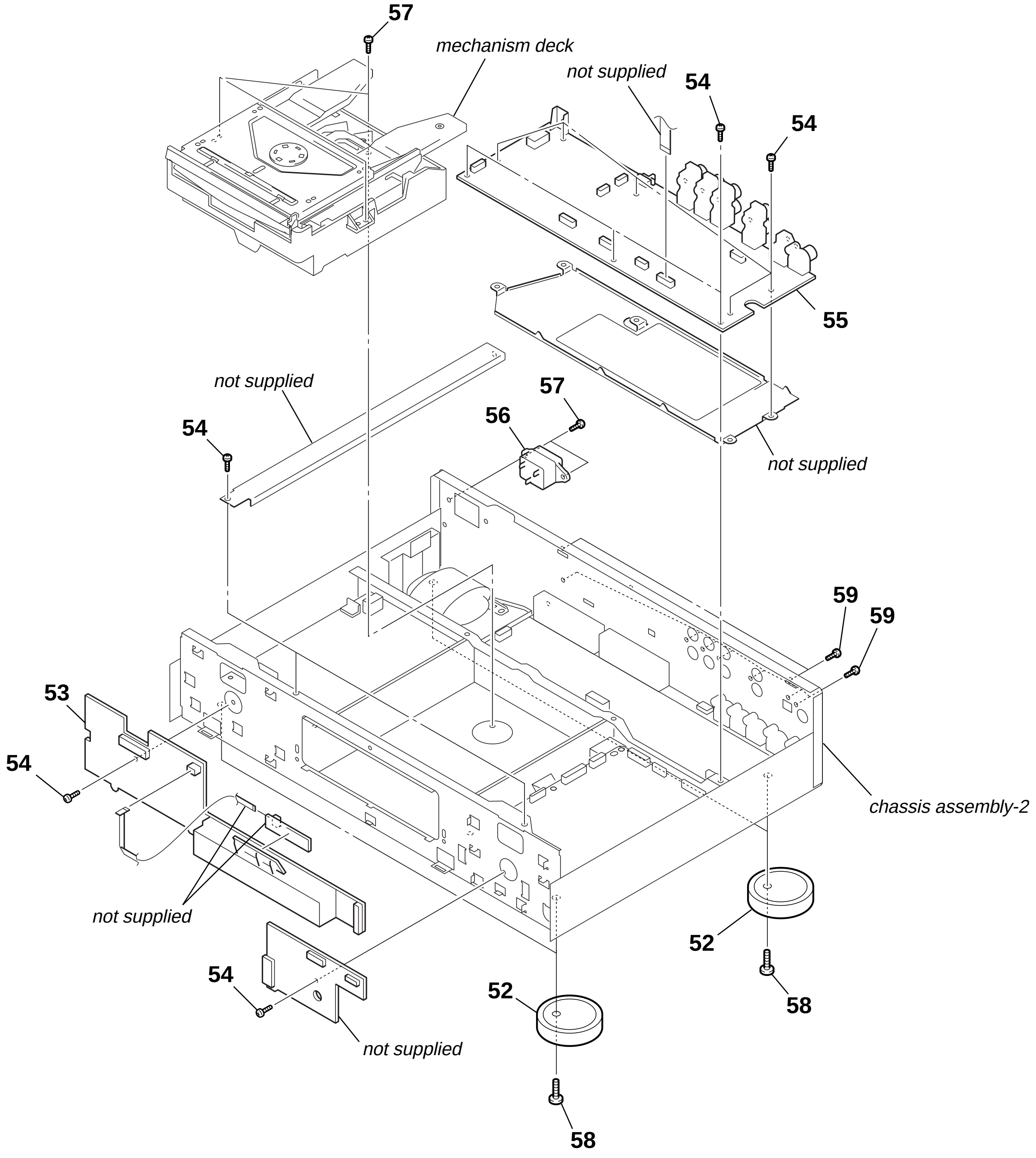
- Abbreviation
  CND : Canadian model
  KR : Korean model

### 8-1-1. FRONT PANEL ASSEMBLY



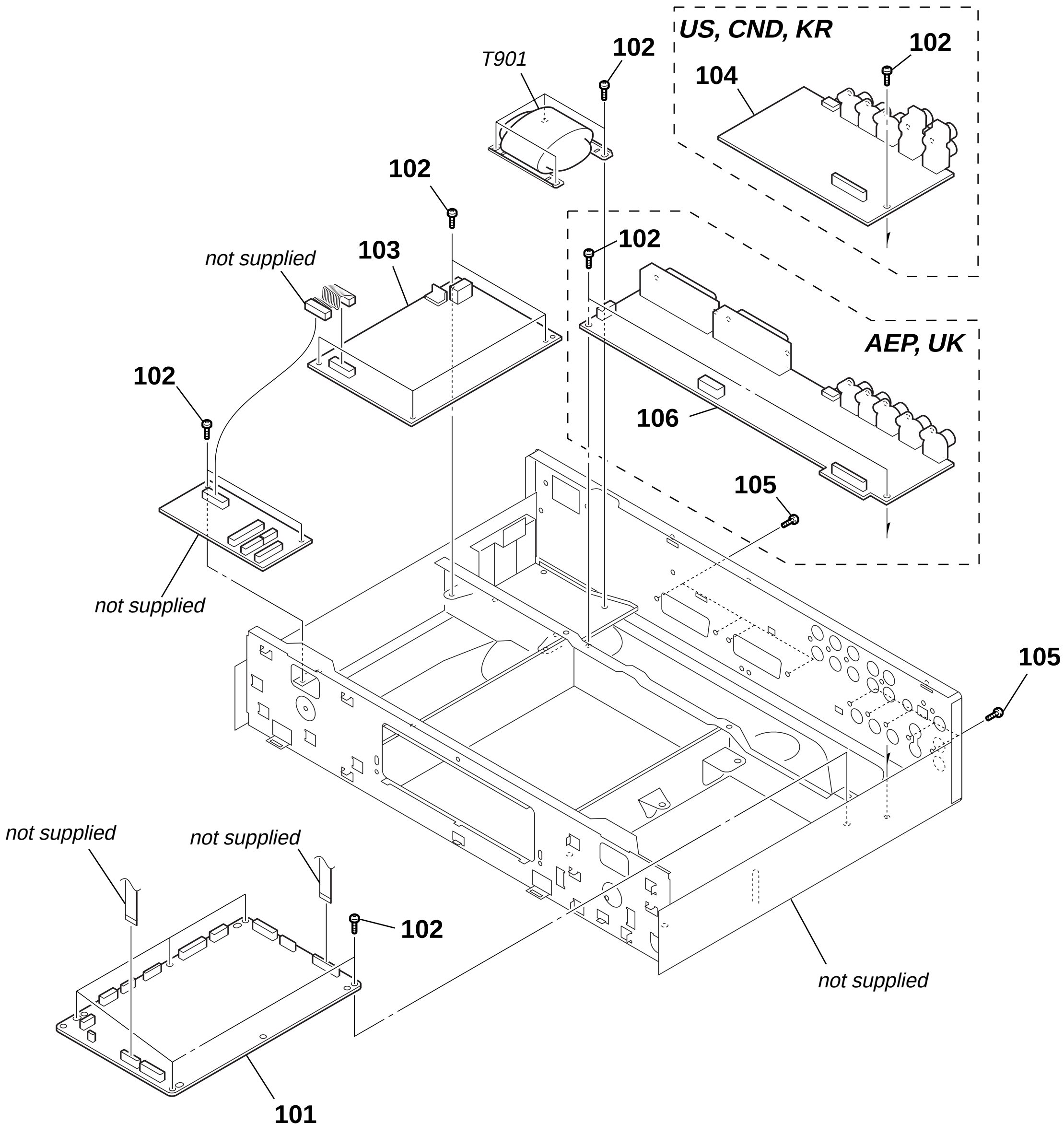
| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| 1 | X-3952-712-1 | BUTTON ASSY (B), FUNCTION (BLACK) | (US, CND) |
| 1 | X-3952-736-1 | BUTTON ASSY (G), FUNCTION (GOLD) | (AEP, UK, KR) |
| 2 | 4-230-638-11 | INDICATOR BUTTON PLAY | |
| 3 | 3-077-317-01 | WINDOW, FL (US, CND) | |
| 3 | 3-077-317-11 | WINDOW, FL (AEP, UK, KR) | |
| 4 | X-3952-720-1 | WINDOW ASSY (B), TRAY (BLACK) (US, CND) | |
| 4 | X-3952-742-1 | WINDOW ASSY (G), TRAY (GOLD) | (AEP, UK, KR) |
| 5 | X-3952-713-1 | PANEL ASSY (B), AL (BLACK) (US, CND) | |
| 5 | X-3952-734-1 | PANEL ASSY (G), AL (GOLD) (AEP, UK, KR) | |
| 6 | 3-077-311-01 | BUTTON, POWER (BLACK) (US, CND) | |
| 6 | 3-077-311-11 | BUTTON, POWER (GOLD) (AEP, UK, KR) | |
| 7 | 3-077-331-01 | +BV3 (3-CR) | |
| 8 | 3-831-441-11 | CUSHION (F) | |
| 9 | 1-477-327-11 | REMOTE COMMANDER (RMT-D150A) | (US, CND, KR) |
| 9 | 1-477-327-31 | REMOTE COMMANDER (RMT-D150P) | (AEP, UK) |
| 10 | 3-071-120-51 | DOOR, SLIDE (US, CND, KR) | |
| 10 | 3-071-120-71 | DOOR, SLIDE (AEP, UK) | |
| 11 | 3-071-119-01 | COVER, BATTERY | |
| 12 | 4-227-843-02 | SCREW (TP), FLAT HEAD (US, CND) | |
| 12 | 4-227-843-12 | SCREW (TP), FLAT HEAD (AEP, UK, KR) | |
| 13 | 3-077-307-01 | CASE, TOP (BLACK) (US, CND) | |
| 13 | 3-077-307-11 | CASE, TOP (GOLD) (AEP, UK, KR) | |
| 14 | 4-942-568-31 | EMBLEM (NO.5), SONY (US, CND) | |
| 15 | X-3952-714-1 | PANEL ASSY (B), FRONT (BLACK) (US, CND) | |
| 15 | X-3952-735-1 | PANEL ASSY (G), FRONT (GOLD) | (AEP, UK, KR) |
| 16 | X-3952-715-1 | KNOB ASSY (B), AMS (BLACK) (US, CND) | |
| 16 | X-3952-741-1 | KNOB ASSY (G), AMS (GOLD) (AEP, UK, KR) | |
| 17 | 3-078-314-01 | WASHER, WAVE | |
| 18 | 4-951-514-01 | WASHER (DIA.15) | |
| 19 | 3-077-331-01 | +BV3 (3-CR) (AEP, UK, KR) | |
| 19 | 4-227-843-02 | SCREW (TP), FLAT HEAD (US, CND) | |

## 8-1-2. CHASSIS ASSEMBLY-1


57
*mechanism deck*
*not supplied*
54
54
55
*not supplied*
57
56
54
*not supplied*
59
59
53
54
*chassis assembly-2*
*not supplied*
52
54
52
58
*not supplied*
58

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| 52 | X-3952-918-1 | FOOT ASSY (AEP, UK, KR) | |
| 52 | X-4949-759-2 | FOOT ASSY (US, CND) | |
| 53 | A-6061-088-A | FL-129 (UC2) BOARD, COMPLETE (US, CND) | |
| 53 | A-6061-106-A | FL-129 (EC1) BOARD, COMPLETE (AEP, UK, KR) | |
| 54 | 3-077-331-01 | +BV3 (3-CR) | |
| 55 | A-6061-082-A | AU-232 (UC2) BOARD, COMPLETE (US, CND) | |
| 55 | A-6061-105-A | AU-232 (EC1) BOARD, COMPLETE (AEP, UK) | |
| 55 | A-6061-111-A | AU-232 (KR2) BOARD, COMPLETE (KR) | |
| 56 | 1-816-880-12 | INLET ASSY, AC (US, CND) | |
| 56 | 1-816-880-22 | INLET ASSY, AC (AEP, UK, KR) | |
| 57 | 3-970-608-51 | SUMITITE (B3), +BV | |
| 58 | 3-066-209-11 | S TYPE +P4 SWPW | |
| 59 | 3-068-321-01 | B TYPE +BV3 (CU) | |

### 8-1-3. CHASSIS ASSEMBLY-2



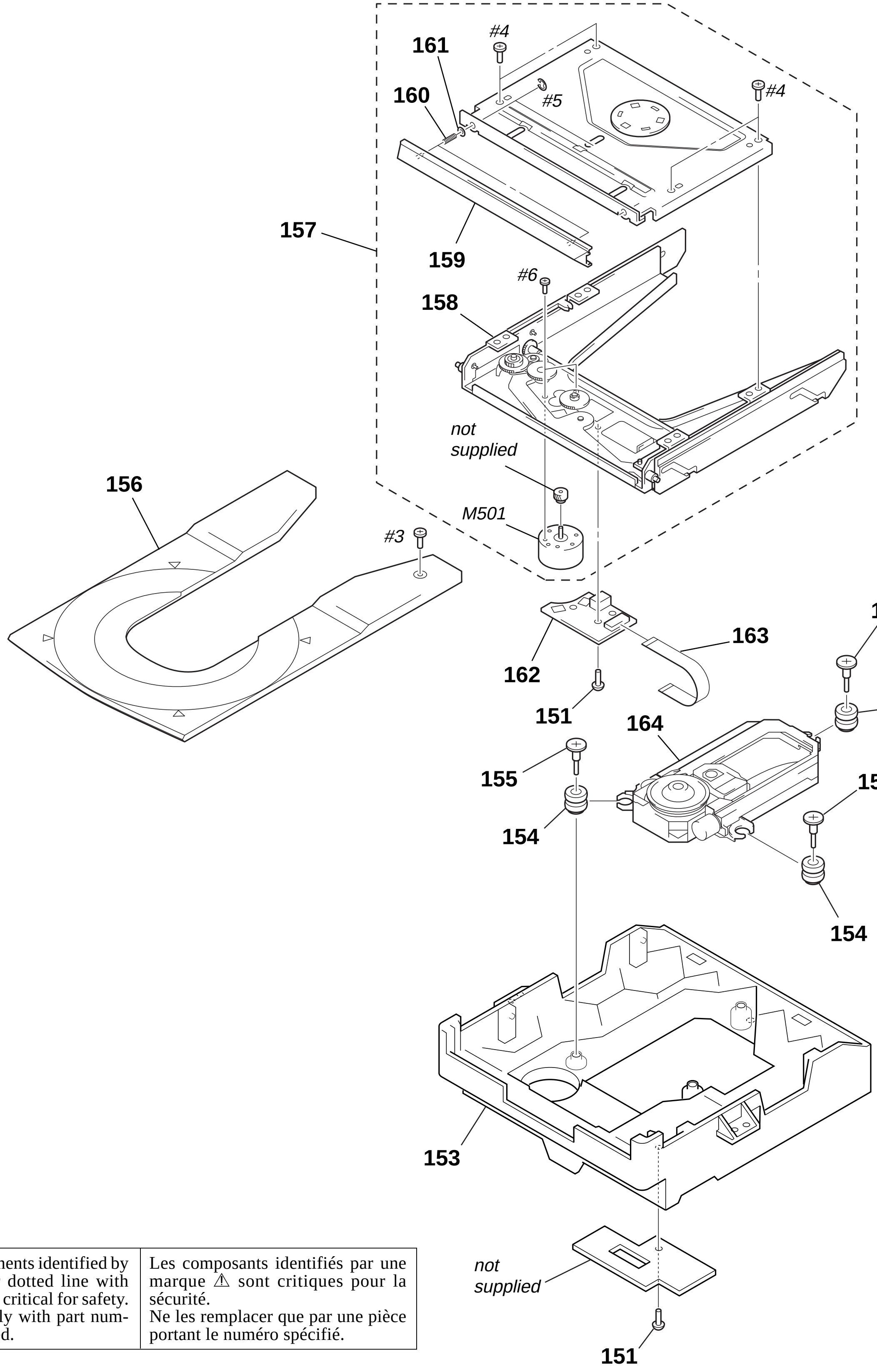
US, CND, KR
102
104
T901
102
102
102
not supplied
103
AEP, UK
102
106
105
not supplied
105
not supplied
not supplied
102
not supplied
101

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| 101 | A-6061-079-A | MB-107 (UC2) BOARD, COMPLETE (US, CND) | |
| 101 | A-6061-102-A | MB-107 (EC1) BOARD, COMPLETE (AEP, UK) | |
| 101 | A-6061-108-A | MB-107 (KR2) BOARD, COMPLETE (KR) | |
| 102 | 3-077-331-01 | +BV3 (3-CR) | |
| 103 | 1-468-686-11 | POWER BLOCK (ZSSR107G) (US, CND) | |
| 103 | 1-468-687-11 | POWER BLOCK (ZSSR107H) (AEP, UK, KR) | |
| 104 | A-6061-094-A | VP-58 (UC2) BOARD, COMPLETE (US, CND, KR) | |
| 105 | 3-970-608-51 | SUMITITE (B3), +BV | |
| 106 | A-6061-092-A | EV-15 BOARD, COMPLETE (AEP, UK) | |
| ⚠T901 | 1-437-496-21 | TRANSFORMER, POWER (US, CND) | |
| ⚠T901 | 1-437-497-21 | TRANSFORMER, POWER (AEP, UK, KR) | |

## 8-1-4. MECHANISM DECK ASSEMBLY


161
#4
#5
#4
160
157
159
#6
158
not
supplied
156
M501
#3
155
163
162
151
154
164
155
155
154
154
153
not
supplied
151

| | |
|---|---|
| The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified. | Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié. |

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| 151 | 3-077-331-01 | +BV3 (3-CR)5 | |
| 153 | X-3952-716-2 | MECHA BASE ASSY | |
| 154 | 3-053-847-11 | INSULATOR | |
| 155 | 3-074-729-01 | SCREW, INS | |
| 156 | X-3952-718-3 | TRAY ASSY | |
| 157 | A-6061-128-D | LOADING ASSY | |
| 158 | X-3952-719-1 | BASE ASSY, LOADING | |
| 159 | X-3952-717-3 | DOOR ASSY | |
| 160 | 3-077-324-01 | SPRING, COMPRESSION | |
| * 161 | 3-367-419-01 | WASHER (SUS) | |
| 162 | A-6061-086-A | MS-113 BOARD, COMPLETE | |
| 163 | 1-757-068-12 | CABLE, FLEXIBLE FLAT (FCM-13) | |
| ⚠ 164 | A-6062-709-A | SERVICE ASSY, KHM-270AAA | |
| M501 | 1-763-397-21 | MOTOR, DC (RF-300FA-12350) | |

## 8-2. ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL: Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F: nonflammable
- Not all of the parts for POWER BLOCK (ZSSR107G/ZSSR107H) are listed.
- Items marked "*" are not stocked since they are seldom required for routine service.
  Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u: μ, for example:
  uA. . : μA. . uPA. . : μPA. .
  uPB. . : μPB. . uPC. . : μPC. .
  uPD. . : μPD. .
- CAPACITORS
  uF: μF
- COILS
  uH: μH
- Abbreviation
  CND : Canadian model
  KR : Korea model

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiquens pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board.

| Ref. No. | Part No. | Description | | | | Remark |
|---|---|---|---|---|---|---|
| | A-6061-082-A | AU-232 (UC2) BOARD, COMPLETE (US, CND) | | | | |
| | A-6061-105-A | AU-232 (EC1) BOARD, COMPLETE (AEP, UK) | | | | |
| | A-6061-111-A | AU-232 (KR2) BOARD, COMPLETE (KR) | | | | |
| | | *************************** | | | | |
| | | | | | | (Ref. No. 1, 000 Series) |
| | 7-682-148-15 | SCREW, TR | | | | |
| | 4-902-345-01 | HEAT SINK | | | | |
| | | < CAPACITOR > | | | | |
| C102 | 1-136-850-11 | MYLAR | 0.1uF | 5% | 63V | |
| C103 | 1-119-814-21 | ELECT | 1000uF | 20% | 35V | |
| C104 | 1-119-814-21 | ELECT | 1000uF | 20% | 35V | |
| C105 | 1-119-814-21 | ELECT | 1000uF | 20% | 35V | |
| C106 | 1-119-814-21 | ELECT | 1000uF | 20% | 35V | |
| C107 | 1-109-857-11 | ELECT | 47uF | 20% | 63V | |
| C108 | 1-163-009-91 | CERAMIC CHIP | 0.001uF | 10% | 50V | |
| C109 | 1-136-850-11 | MYLAR | 0.1uF | 5% | 63V | |
| C110 | 1-127-721-91 | ELECT | 1000PF | 20% | 16V | |
| C111 | 1-109-857-11 | ELECT | 47uF | 20% | 63V | |
| C112 | 1-136-850-11 | MYLAR | 0.1uF | 5% | 63V | |
| C113 | 1-119-820-11 | ELECT | 1uF | 20% | 50V | |
| C114 | 1-119-820-11 | ELECT | 1uF | 20% | 50V | |
| C115 | 1-119-820-11 | ELECT | 1uF | 20% | 50V | |
| C116 | 1-136-850-11 | MYLAR | 0.1uF | 5% | 63V | |
| C117 | 1-119-799-11 | ELECT | 47uF | 20% | 25V | |
| C118 | 1-130-474-00 | MYLAR | 0.0018uF | 5% | 50V | |
| C119 | 1-130-474-00 | MYLAR | 0.0018uF | 5% | 50V | |
| C120 | 1-130-474-00 | MYLAR | 0.0018uF | 5% | 50V | |
| C122 | 1-130-474-00 | MYLAR | 0.0018uF | 5% | 50V | |
| C123 | 1-130-474-00 | MYLAR | 0.0018uF | 5% | 50V | |
| C124 | 1-130-474-00 | MYLAR | 0.0018uF | 5% | 50V | |
| C125 | 1-130-474-00 | MYLAR | 0.0018uF | 5% | 50V | |
| C126 | 1-136-810-11 | FILM | 220PF | 5% | 100V | |
| C127 | 1-136-810-11 | FILM | 220PF | 5% | 100V | |
| C128 | 1-136-810-11 | FILM | 220PF | 5% | 100V | |
| C129 | 1-136-810-11 | FILM | 220PF | 5% | 100V | |
| C130 | 1-130-467-00 | MYLAR | 470PF | 5% | 50V | |
| C131 | 1-136-810-11 | FILM | 220PF | 5% | 100V | |
| C132 | 1-109-857-11 | ELECT | 47uF | 20% | 63V | |
| C133 | 1-137-605-11 | MYLAR | 0.00022uF | 5% | 50V | |
| C134 | 1-137-605-11 | MYLAR | 0.00022uF | 5% | 50V | |
| C135 | 1-128-654-21 | FILM | 2200PF | 5% | 50V | |
| | | | | | | (AEP, UK, KR) |
| C136 | 1-128-654-21 | FILM | 2200PF | 5% | 50V | |
| | | | | | | (AEP, UK, KR) |
| C137 | 1-130-477-00 | MYLAR | 0.0033uF | 5% | 50V | |
| C138 | 1-136-850-11 | MYLAR | 0.1uF | 5% | 63V | |
| C139 | 1-106-351-00 | MYLAR | 2200PF | 5% | 200V | |
| C140 | 1-136-810-11 | FILM | 220PF | 5% | 100V | |
| C141 | 1-128-654-21 | FILM | 2200PF | 5% | 50V | |
| | | | | | | (AEP, UK, KR) |
| C142 | 1-136-810-11 | FILM | 220PF | 5% | 100V | |
| C143 | 1-128-654-21 | FILM | 2200PF | 5% | 50V | |
| | | | | | | (AEP, UK, KR) |
| C144 | 1-130-467-00 | MYLAR | 470PF | 5% | 50V | |
| C145 | 1-128-654-21 | FILM | 2200PF | 5% | 50V | |
| | | | | | | (AEP, UK, KR) |
| C146 | 1-119-814-21 | ELECT | 1000uF | 20% | 35V | |
| C147 | 1-137-605-11 | MYLAR | 0.00022uF | 5% | 50V | |
| C148 | 1-106-351-00 | MYLAR | 2200PF | 5% | 200V | |
| C149 | 1-136-810-11 | FILM | 220PF | 5% | 100V | |
| C150 | 1-136-810-11 | FILM | 220PF | 5% | 100V | |
| C151 | 1-136-810-11 | FILM | 220PF | 5% | 100V | |
| C152 | 1-137-605-11 | MYLAR | 0.00022uF | 5% | 50V | |
| C153 | 1-136-850-11 | MYLAR | 0.1uF | 5% | 63V | |
| C154 | 1-109-857-11 | ELECT | 47uF | 20% | 63V | |
| C155 | 1-109-857-11 | ELECT | 47uF | 20% | 63V | |
| C156 | 1-136-850-11 | MYLAR | 0.1uF | 5% | 63V | |
| C157 | 1-136-850-11 | MYLAR | 0.1uF | 5% | 63V | |
| C158 | 1-109-857-11 | ELECT | 47uF | 20% | 63V | |
| C159 | 1-109-857-11 | ELECT | 47uF | 20% | 63V | |
| C160 | 1-136-850-11 | MYLAR | 0.1uF | 5% | 63V | |
| C161 | 1-136-850-11 | MYLAR | 0.1uF | 5% | 63V | |
| C162 | 1-109-857-11 | ELECT | 47uF | 20% | 63V | |
| C163 | 1-109-857-11 | ELECT | 47uF | 20% | 63V | |
| C164 | 1-136-850-11 | MYLAR | 0.1uF | 5% | 63V | |
| C165 | 1-119-814-21 | ELECT | 1000uF | 20% | 35V | |
| C168 | 1-127-718-91 | ELECT | 100uF | 20% | 16V | |
| C169 | 1-127-718-91 | ELECT | 100uF | 20% | 16V | |
| C171 | 1-163-259-91 | CERAMIC CHIP | 220PF | 5% | 50V | |
| C172 | 1-163-259-91 | CERAMIC CHIP | 220PF | 5% | 50V | |
| C173 | 1-163-259-91 | CERAMIC CHIP | 220PF | 5% | 50V | |
| C174 | 1-163-259-91 | CERAMIC CHIP | 220PF | 5% | 50V | |
| C175 | 1-163-259-91 | CERAMIC CHIP | 220PF | 5% | 50V | |
| C176 | 1-163-259-91 | CERAMIC CHIP | 220PF | 5% | 50V | |
| C178 | 1-163-259-91 | CERAMIC CHIP | 220PF | 5% | 50V | |

# AU-232

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| C179 | 1-163-259-91 | CERAMIC CHIP 220PF 5% | 50V |
| C180 | 1-136-850-11 | MYLAR 0.1uF 5% | 63V |
| C181 | 1-104-645-11 | CERAMIC 1uF 20% | 50V |
| C182 | 1-163-009-91 | CERAMIC CHIP 0.001uF 10% | 50V (US, CND) |
| C183 | 1-163-243-11 | CERAMIC CHIP 47PF 5% | 50V |
| C184 | 1-119-824-31 | ELECT 10uF 20% | 50V |
| C185 | 1-164-004-11 | CERAMIC CHIP 0.1uF 10% | 25V |
| C186 | 1-136-850-11 | MYLAR 0.1uF 5% | 63V |
| C187 | 1-106-351-00 | MYLAR 2200PF 5% | 200V (US, CND) |
| C188 | 1-106-351-00 | MYLAR 2200PF 5% | 200V (US, CND) |
| C189 | 1-106-351-00 | MYLAR 2200PF 5% | 200V (US, CND) |
| C190 | 1-106-351-00 | MYLAR 2200PF 5% | 200V (US, CND) |
| C191 | 1-106-351-00 | MYLAR 2200PF 5% | 200V (US, CND) |
| | | < CONNECTOR > | |
| * CN101 | 1-564-241-11 | PIN, CONNECTOR (3.96MM PITCH)4P | |
| CN105 | 1-785-695-11 | CONNECTOR, FFC/FPC 13P | |
| * CN106 | 1-506-470-11 | PIN, CONNECTOR 5P | |
| CN107 | 1-506-469-11 | PIN, CONNECTOR 4P (AEP, UK) | |
| | | < DIODE > | |
| D101 | 8-719-210-21 | DIODE 11EQS04-TA1B | |
| D102 | 8-719-210-21 | DIODE 11EQS04-TA1B | |
| D103 | 8-719-210-21 | DIODE 11EQS04-TA1B | |
| D104 | 8-719-210-21 | DIODE 11EQS04-TA1B | |
| D105 | 8-719-914-43 | DIODE DAN202K-T-146 | |
| D106 | 8-719-988-61 | DIODE 1SS355TE-17 | |
| D107 | 8-719-933-74 | DIODE RD12JS-T2AB | |
| | | < FERRITE BEAD > | |
| FB101 | 1-414-553-11 | FERRITE 0uH (US, CND) | |
| FB102 | 1-414-553-11 | FERRITE 0uH (US, CND) | |
| | | < IC > | |
| IC101 | 8-759-711-85 | IC NJM4580E-D-TE2 | |
| IC102 | 8-759-443-33 | IC OPA2132PA (AEP, UK, KR) | |
| IC102 | 8-759-712-02 | IC NJM2114D (US, CND) | |
| IC103 | 8-759-443-33 | IC OPA2132PA (AEP, UK, KR) | |
| IC103 | 8-759-712-02 | IC NJM2114D (US, CND) | |
| IC104 | 8-759-443-33 | IC OPA2132PA (AEP, UK, KR) | |
| IC104 | 8-759-712-02 | IC NJM2114D (US, CND) | |
| IC105 | 8-759-231-53 | IC M5F7805L | |
| IC106 | 8-759-145-58 | IC BA4558 | |
| IC107 | 8-759-242-70 | IC TC7WU04F (TE12R) | |
| IC108 | 6-600-005-01 | IC GP1FA351TZ | |
| | | < JACK > | |
| J101 | 1-784-430-11 | JACK, PIN 4P (AUDIO OUT) (US, CND, KR) | |
| J105 | 1-785-868-21 | JACK, PIN 2P (AUDIO OUT) (AEP, UK) | |
| J106 | 1-764-188-21 | JACK (SMALL TYPE) (DIA. 3.5) (CONTROL S) | (US, CND) |
| J107 | 1-784-689-11 | JACK, PIN 1P (DIGITAL OUT) | |
| | | < TRANSISTOR > | |
| Q101 | 8-729-052-94 | TRANSISTOR 2SA1930 | |
| Q102 | 8-729-421-19 | TRANSISTOR UN2213-TX | |
| Q103 | 8-729-421-19 | TRANSISTOR UN2213-TX | |
| Q104 | 8-729-421-19 | TRANSISTOR UN2213-TX | |
| Q105 | 8-729-052-95 | TRANSISTOR 2SC5171 | |
| Q106 | 8-729-027-53 | TRANSISTOR DTC124TKA-T146 | |
| Q107 | 8-729-027-53 | TRANSISTOR DTC124TKA-T146 | |
| Q108 | 8-729-027-53 | TRANSISTOR DTC124TKA-T146 | |
| Q109 | 8-729-424-02 | TRANSISTOR 2SB709A-QRS-TX | |
| Q110 | 8-729-424-02 | TRANSISTOR 2SB709A-QRS-TX | |
| Q111 | 8-729-424-02 | TRANSISTOR 2SB709A-QRS-TX | |
| Q112 | 8-729-224-62 | TRANSISTOR 2SK246GR-TPE2 | |
| Q113 | 8-729-046-97 | TRANSISTOR 2SD1938 (F)-T (TX).SO | |
| Q114 | 8-729-046-97 | TRANSISTOR 2SD1938 (F)-T (TX).SO | |
| Q115 | 8-729-046-97 | TRANSISTOR 2SD1938 (F)-T (TX).SO | |
| Q116 | 8-729-046-97 | TRANSISTOR 2SD1938 (F)-T (TX).SO | |
| Q117 | 8-729-046-97 | TRANSISTOR 2SD1938 (F)-T (TX).SO | |
| Q118 | 8-729-046-97 | TRANSISTOR 2SD1938 (F)-T (TX).SO | |
| Q120 | 8-729-046-97 | TRANSISTOR 2SD1938 (F)-T (TX).SO | |
| Q121 | 8-729-046-97 | TRANSISTOR 2SD1938 (F)-T (TX).SO | |
| | | < RESISTOR > | |
| R101 | 1-208-798-11 | METAL CHIP 4.7K 0.5% | 1/10W |
| R102 | 1-208-798-11 | METAL CHIP 4.7K 0.5% | 1/10W |
| R103 | 1-249-963-11 | CARBON 47K 5% | 1/4W |
| R104 | 1-249-963-11 | CARBON 47K 5% | 1/4W |
| R105 | 1-208-798-11 | METAL CHIP 4.7K 0.5% | 1/10W |
| R106 | 1-259-440-11 | CARBON 3.3K 5% | 1/6W |
| R107 | 1-259-404-11 | CARBON 100 5% | 1/6W |
| R108 | 1-259-440-11 | CARBON 3.3K 5% | 1/6W |
| R109 | 1-208-806-11 | METAL CHIP 10K 0.5% | 1/10W |
| R110 | 1-208-806-11 | METAL CHIP 10K 0.5% | 1/10W |
| R111 | 1-208-806-11 | METAL CHIP 10K 0.5% | 1/10W |
| R112 | 1-259-404-11 | CARBON 100 5% | 1/6W |
| R113 | 1-208-806-11 | METAL CHIP 10K 0.5% | 1/10W |
| R114 | 1-208-822-11 | METAL CHIP 47K 0.5% | 1/10W |
| R115 | 1-208-806-11 | METAL CHIP 10K 0.5% | 1/10W |
| R116 | 1-208-822-11 | METAL CHIP 47K 0.5% | 1/10W |
| R117 | 1-208-806-11 | METAL CHIP 10K 0.5% | 1/10W |
| R118 | 1-208-822-11 | METAL CHIP 47K 0.5% | 1/10W |
| R119 | 1-208-806-11 | METAL CHIP 10K 0.5% | 1/10W |
| R120 | 1-208-806-11 | METAL CHIP 10K 0.5% | 1/10W |
| R121 | 1-208-806-11 | METAL CHIP 10K 0.5% | 1/10W |
| R122 | 1-259-404-11 | CARBON 100 5% | 1/6W |
| R123 | 1-259-466-11 | CARBON 39K 5% | 1/6W |
| R124 | 1-208-788-11 | METAL CHIP 1.8K 0.5% | 1/10W |
| R125 | 1-208-788-11 | METAL CHIP 1.8K 0.5% | 1/10W |
| R126 | 1-208-788-11 | METAL CHIP 1.8K 0.5% | 1/10W |
| R127 | 1-208-788-11 | METAL CHIP 1.8K 0.5% | 1/10W |
| R128 | 1-249-929-11 | CARBON 1.8K 5% | 1/4W |
| R129 | 1-249-929-11 | CARBON 1.8K 5% | 1/4W |
| R130 | 1-249-929-11 | CARBON 1.8K 5% | 1/4W |
| R131 | 1-249-929-11 | CARBON 1.8K 5% | 1/4W |
| R132 | 1-249-929-11 | CARBON 1.8K 5% | 1/4W |
| R133 | 1-249-929-11 | CARBON 1.8K 5% | 1/4W |
| R136 | 1-249-929-11 | CARBON 1.8K 5% | 1/4W |
| R137 | 1-249-929-11 | CARBON 1.8K 5% | 1/4W |
| R138 | 1-249-929-11 | CARBON 1.8K 5% | 1/4W |
| R139 | 1-249-929-11 | CARBON 1.8K 5% | 1/4W |
| R140 | 1-249-929-11 | CARBON 1.8K 5% | 1/4W |
| R141 | 1-249-929-11 | CARBON 1.8K 5% | 1/4W |
| R142 | 1-249-929-11 | CARBON 1.8K 5% | 1/4W |

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| R143 | 1-249-929-11 | CARBON | 1.8K | 5% | 1/4W |
| R144 | 1-249-929-11 | CARBON | 1.8K | 5% | 1/4W |
| R145 | 1-249-929-11 | CARBON | 1.8K | 5% | 1/4W |
| R146 | 1-249-929-11 | CARBON | 1.8K | 5% | 1/4W |
| R147 | 1-249-929-11 | CARBON | 1.8K | 5% | 1/4W |
| R148 | 1-249-926-11 | CARBON | 1.3K | 5% | 1/4W |
| R149 | 1-249-926-11 | CARBON | 1.3K | 5% | 1/4W |
| R150 | 1-249-929-11 | CARBON | 1.8K | 5% | 1/4W |
| R151 | 1-249-929-11 | CARBON | 1.8K | 5% | 1/4W |
| R154 | 1-208-788-11 | METAL CHIP | 1.8K | 0.5% | 1/10W |
| R155 | 1-208-788-11 | METAL CHIP | 1.8K | 0.5% | 1/10W |
| R156 | 1-208-788-11 | METAL CHIP | 1.8K | 0.5% | 1/10W |
| R157 | 1-208-788-11 | METAL CHIP | 1.8K | 0.5% | 1/10W |
| R158 | 1-249-938-11 | CARBON | 4.3K | 5% | 1/4W |
| R159 | 1-249-938-11 | CARBON | 4.3K | 5% | 1/4W |
| R160 | 1-249-938-11 | CARBON | 4.3K | 5% | 1/4W |
| R161 | 1-249-938-11 | CARBON | 4.3K | 5% | 1/4W |
| R162 | 1-249-941-11 | CARBON | 5.6K | 5% | 1/4W |
| R163 | 1-249-938-11 | CARBON | 4.3K | 5% | 1/4W |
| R165 | 1-208-797-11 | METAL CHIP | 4.3K | 0.5% | 1/10W |
| R166 | 1-208-797-11 | METAL CHIP | 4.3K | 0.5% | 1/10W |
| R167 | 1-249-925-11 | CARBON | 1.2K | 5% | 1/4W |
| R168 | 1-249-925-11 | CARBON | 1.2K | 5% | 1/4W |
| R169 | 1-249-929-11 | CARBON | 1.8K | 5% | 1/4W |
| R171 | 1-208-784-11 | METAL CHIP | 1.2K | 0.5% | 1/10W |
| R172 | 1-249-925-11 | CARBON | 1.2K | 5% | 1/4W |
| R173 | 1-249-925-11 | CARBON | 1.2K | 5% | 1/4W |
| R174 | 1-249-925-11 | CARBON | 1.2K | 5% | 1/4W |
| R175 | 1-249-925-11 | CARBON | 1.2K | 5% | 1/4W |
| R176 | 1-249-929-11 | CARBON | 1.8K | 5% | 1/4W |
| R177 | 1-249-925-11 | CARBON | 1.2K | 5% | 1/4W |
| R179 | 1-208-784-11 | METAL CHIP | 1.2K | 0.5% | 1/10W |
| R180 | 1-208-784-11 | METAL CHIP | 1.2K | 0.5% | 1/10W |
| R181 | 1-249-938-11 | CARBON | 4.3K | 5% | 1/4W |
| R182 | 1-249-925-11 | CARBON | 1.2K | 5% | 1/4W |
| R183 | 1-249-938-11 | CARBON | 4.3K | 5% | 1/4W |
| R184 | 1-249-925-11 | CARBON | 1.2K | 5% | 1/4W |
| R185 | 1-249-941-11 | CARBON | 5.6K | 5% | 1/4W |
| R186 | 1-249-925-11 | CARBON | 1.2K | 5% | 1/4W |
| R188 | 1-208-797-11 | METAL CHIP | 4.3K | 0.5% | 1/10W |
| R189 | 1-208-784-11 | METAL CHIP | 1.2K | 0.5% | 1/10W |
| R190 | 1-249-938-11 | CARBON | 4.3K | 5% | 1/4W |
| R191 | 1-249-938-11 | CARBON | 4.3K | 5% | 1/4W |
| R192 | 1-249-938-11 | CARBON | 4.3K | 5% | 1/4W |
| R193 | 1-208-797-11 | METAL CHIP | 4.3K | 0.5% | 1/10W |
| R196 | 1-259-404-11 | CARBON | 100 | 5% | 1/6W<br>(AEP, UK) |
| R197 | 1-259-404-11 | CARBON | 100 | 5% | 1/6W<br>(AEP, UK) |
| R198 | 1-208-822-11 | METAL CHIP | 47K | 0.5% | 1/10W |
| R199 | 1-208-822-11 | METAL CHIP | 47K | 0.5% | 1/10W |
| R200 | 1-208-822-11 | METAL CHIP | 47K | 0.5% | 1/10W |
| R201 | 1-208-822-11 | METAL CHIP | 47K | 0.5% | 1/10W |
| R202 | 1-208-822-11 | METAL CHIP | 47K | 0.5% | 1/10W |
| R203 | 1-208-822-11 | METAL CHIP | 47K | 0.5% | 1/10W |
| R205 | 1-208-822-11 | METAL CHIP | 47K | 0.5% | 1/10W |
| R206 | 1-208-822-11 | METAL CHIP | 47K | 0.5% | 1/10W |
| R207 | 1-249-915-11 | CARBON | 470 | 5% | 1/4W |
| R208 | 1-249-915-11 | CARBON | 470 | 5% | 1/4W |
| R209 | 1-249-915-11 | CARBON | 470 | 5% | 1/4W |

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| R210 | 1-249-915-11 | CARBON | 470 | 5% | 1/4W |
| R211 | 1-249-915-11 | CARBON | 470 | 5% | 1/4W |
| R212 | 1-249-915-11 | CARBON | 470 | 5% | 1/4W |
| R214 | 1-259-420-11 | CARBON | 470 | 5% | 1/6W |
| R215 | 1-259-420-11 | CARBON | 470 | 5% | 1/6W |
| R216 | 1-208-794-11 | METAL CHIP | 3.3K | 0.5% | 1/10W |
| R217 | 1-208-794-11 | METAL CHIP | 3.3K | 0.5% | 1/10W |
| R218 | 1-208-794-11 | METAL CHIP | 3.3K | 0.5% | 1/10W |
| R219 | 1-208-794-11 | METAL CHIP | 3.3K | 0.5% | 1/10W |
| R220 | 1-208-794-11 | METAL CHIP | 3.3K | 0.5% | 1/10W |
| R221 | 1-208-794-11 | METAL CHIP | 3.3K | 0.5% | 1/10W |
| R223 | 1-208-794-11 | METAL CHIP | 3.3K | 0.5% | 1/10W |
| R224 | 1-208-794-11 | METAL CHIP | 3.3K | 0.5% | 1/10W |
| R225 | 1-249-405-11 | CARBON | 100 | 5% | 1/4W |
| R226 | 1-249-405-11 | CARBON | 100 | 5% | 1/4W |
| R227 | 1-249-405-11 | CARBON | 100 | 5% | 1/4W |
| R228 | 1-249-405-11 | CARBON | 100 | 5% | 1/4W |
| R229 | 1-249-405-11 | CARBON | 100 | 5% | 1/4W |
| R230 | 1-249-405-11 | CARBON | 100 | 5% | 1/4W |
| R232 | 1-259-404-11 | CARBON | 100 | 5% | 1/6W |
| R233 | 1-259-404-11 | CARBON | 100 | 5% | 1/6W |
| R234 | 1-216-635-11 | METAL CHIP | 220 | 0.5% | 1/10W |
| R235 | 1-249-995-11 | CARBON | 1M | 5% | 1/4W |
| R236 | 1-208-782-11 | METAL CHIP | 1K | 0.5% | 1/10W<br>(US, CND) |
| R238 | 1-249-525-11 | CARBON | 75 | 5% | 1/4W |
| R240 | 1-216-059-00 | RES-CHIP | 2.7K | 5% | 1/10W |
| R241 | 1-216-063-91 | RES-CHIP | 3.9K | 5% | 1/10W |
| R242 | 1-208-830-11 | METAL CHIP | 100K | 0.5% | 1/10W |
| R243 | 1-208-830-11 | METAL CHIP | 100K | 0.5% | 1/10W |
| R244 | 1-208-830-11 | METAL CHIP | 100K | 0.5% | 1/10W |
| R245 | 1-259-404-11 | CARBON | 100 | 5% | 1/6W<br>(US, CND, KR) |
| R246 | 1-259-404-11 | CARBON | 100 | 5% | 1/6W<br>(US, CND, KR) |
| | | < SWITCH > | | | |
| S101 | 1-692-989-11 | SWITCH, SLIDE (COMMAND MODE) | | | |
| | | < TRANSFORMER > | | | |
| T101 | 1-416-701-11 | COIL (WITH CORE) | | | |

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CK-119 BOARD
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(Ref. No. 2, 000 Series)

< CONNECTOR >

| Ref. No. | Part No. | Description |
|---|---|---|
| CN601 | 1-564-723-11 | PIN, CONNECTOR (SMALL TYPE) 7P |
| CN602 | 1-784-612-11 | CONNECTOR, FFC/FPC (ZIF) 7P |

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A-6061-092-A EV-15 BOARD, COMPLETE (AEP, UK)
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(Ref. No. 2, 000 Series)

7-685-871-01 SCREW +BVTT 3X6 (S)

< CAPACITOR >

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| C101 | 1-165-732-31 | ELECT | 47uF | 20% | 25V |
| C102 | 1-164-004-11 | CERAMIC CHIP | 0.1uF | 10% | 25V |
| C103 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| C104 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C105 | 1-165-722-31 | ELECT | 100uF | 20% | 10V |
| C106 | 1-164-004-11 | CERAMIC CHIP | 0.1uF | 10% | 25V |
| C107 | 1-163-009-91 | CERAMIC CHIP | 0.001uF | 10% | 50V |
| C108 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C109 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C110 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C111 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C112 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C113 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C114 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C115 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C116 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C117 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C118 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C119 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C120 | 1-165-722-31 | ELECT | 100uF | 20% | 10V |
| C121 | 1-164-004-11 | CERAMIC CHIP | 0.1uF | 10% | 25V |
| C122 | 1-126-205-11 | ELECT CHIP | 47uF | 20% | 6.3V |
| C123 | 1-126-205-11 | ELECT CHIP | 47uF | 20% | 6.3V |
| C124 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C125 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C126 | 1-163-085-00 | CERAMIC CHIP | 2PF | | 50V |
| C127 | 1-164-004-11 | CERAMIC CHIP | 0.1uF | 10% | 25V |
| C128 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C129 | 1-164-004-11 | CERAMIC CHIP | 0.1uF | 10% | 25V |
| C130 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C131 | 1-164-004-11 | CERAMIC CHIP | 0.1uF | 10% | 25V |
| C132 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C133 | 1-126-205-11 | ELECT CHIP | 47uF | 20% | 6.3V |
| C134 | 1-126-205-11 | ELECT CHIP | 47uF | 20% | 6.3V |
| C136 | 1-126-205-11 | ELECT CHIP | 47uF | 20% | 6.3V |
| C137 | 1-126-205-11 | ELECT CHIP | 47uF | 20% | 6.3V |
| C138 | 1-127-956-21 | FILM CHIP | 0.1uF | 5% | 16V |
| C139 | 1-126-205-11 | ELECT CHIP | 47uF | 20% | 6.3V |
| C140 | 1-127-956-21 | FILM CHIP | 0.1uF | 5% | 16V |
| C141 | 1-126-205-11 | ELECT CHIP | 47uF | 20% | 6.3V |
| C142 | 1-127-956-21 | FILM CHIP | 0.1uF | 5% | 16V |
| C143 | 1-126-205-11 | ELECT CHIP | 47uF | 20% | 6.3V |
| C144 | 1-126-205-11 | ELECT CHIP | 47uF | 20% | 6.3V |
| C145 | 1-126-205-11 | ELECT CHIP | 47uF | 20% | 6.3V |
| C147 | 1-164-004-11 | CERAMIC CHIP | 0.1uF | 10% | 25V |
| C148 | 1-127-956-21 | FILM CHIP | 0.1uF | 5% | 16V |
| C149 | 1-163-085-00 | CERAMIC CHIP | 2PF | | 50V |
| C150 | 1-163-085-00 | CERAMIC CHIP | 2PF | | 50V |
| C151 | 1-163-085-00 | CERAMIC CHIP | 2PF | | 50V |
| C152 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C153 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C154 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C155 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C156 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C157 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C158 | 1-126-205-11 | ELECT CHIP | 47uF | 20% | 6.3V |
| C159 | 1-126-205-11 | ELECT CHIP | 47uF | 20% | 6.3V |
| C160 | 1-163-809-11 | CERAMIC CHIP | 0.047uF | 10% | 25V |
| C303 | 1-126-205-11 | ELECT CHIP | 47uF | 20% | 6.3V |
| C304 | 1-126-205-11 | ELECT CHIP | 47uF | 20% | 6.3V |
| C307 | 1-126-395-11 | ELECT CHIP | 22uF | 20% | 16V |
| C308 | 1-163-085-00 | CERAMIC CHIP | 2PF | | 50V |
| C309 | 1-163-085-00 | CERAMIC CHIP | 2PF | | 50V |
| C310 | 1-163-085-00 | CERAMIC CHIP | 2PF | | 50V |
| C311 | 1-163-085-00 | CERAMIC CHIP | 2PF | | 50V |
| C312 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C313 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C314 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C315 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C316 | 1-163-133-00 | CERAMIC CHIP | 470PF | 5% | 50V |
| C317 | 1-163-133-00 | CERAMIC CHIP | 470PF | 5% | 50V |
| C318 | 1-163-133-00 | CERAMIC CHIP | 470PF | 5% | 50V |
| C319 | 1-163-133-00 | CERAMIC CHIP | 470PF | 5% | 50V |
| C320 | 1-163-133-00 | CERAMIC CHIP | 470PF | 5% | 50V |
| C321 | 1-163-133-00 | CERAMIC CHIP | 470PF | 5% | 50V |
| C322 | 1-163-133-00 | CERAMIC CHIP | 470PF | 5% | 50V |
| C323 | 1-163-133-00 | CERAMIC CHIP | 470PF | 5% | 50V |
| C325 | 1-163-251-11 | CERAMIC CHIP | 100PF | 5% | 50V |
| C326 | 1-163-251-11 | CERAMIC CHIP | 100PF | 5% | 50V |
| C328 | 1-163-251-11 | CERAMIC CHIP | 100PF | 5% | 50V |
| C329 | 1-163-251-11 | CERAMIC CHIP | 100PF | 5% | 50V |
| C330 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C331 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C332 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C333 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C334 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C338 | 1-127-956-21 | FILM CHIP | 0.1uF | 5% | 16V |
| | | < CONNECTOR > | | | |
| CN101 | 1-779-343-11 | CONNECTOR, FFC/FPC 23P | | | |
| CN102 | 1-770-215-11 | PIN, CONNECTOR (PC BOARD) 7P | | | |
| CN301 | 1-778-063-41 | PIN, CONNECTOR (PC BOARD) 4P | | | |
| CN302 | 1-816-044-11 | CONNECTOR, SQUARE TYPE 21P (LINE 2) | | | |
| CN303 | 1-816-044-11 | CONNECTOR, SQUARE TYPE 21P (LINE 1 (RGB) -TV) | | | |
| | | < DIODE > | | | |
| D101 | 8-719-025-29 | DIODE 02CZ5.1-TE85L | | | |
| D105 | 8-719-988-61 | DIODE 1SS355TE-17 | | | |
| D106 | 8-719-988-61 | DIODE 1SS355TE-17 | | | |
| D108 | 8-719-071-15 | DIODE HZM6.8ZWA1TL | | | |
| D109 | 8-719-988-61 | DIODE 1SS355TE-17 | | | |
| D110 | 8-719-988-61 | DIODE 1SS355TE-17 | | | |
| D113 | 8-719-071-15 | DIODE HZM6.8ZWA1TL | | | |
| D301 | 8-719-988-61 | DIODE 1SS355TE-17 | | | |
| D302 | 8-719-988-61 | DIODE 1SS355TE-17 | | | |
| D303 | 8-719-988-61 | DIODE 1SS355TE-17 | | | |
| D304 | 8-719-988-61 | DIODE 1SS355TE-17 | | | |
| D305 | 8-719-988-61 | DIODE 1SS355TE-17 | | | |
| D306 | 8-719-988-61 | DIODE 1SS355TE-17 | | | |
| D307 | 8-719-988-61 | DIODE 1SS355TE-17 | | | |
| D308 | 8-719-988-61 | DIODE 1SS355TE-17 | | | |
| D309 | 8-719-071-15 | DIODE HZM6.8ZWA1TL | | | |
| D310 | 8-719-071-15 | DIODE HZM6.8ZWA1TL | | | |
| D311 | 8-719-071-15 | DIODE HZM6.8ZWA1TL | | | |
| D312 | 8-719-071-15 | DIODE HZM6.8ZWA1TL | | | |
| D313 | 8-719-071-15 | DIODE HZM6.8ZWA1TL | | | |
| D314 | 8-719-071-15 | DIODE HZM6.8ZWA1TL | | | |
| D315 | 8-719-071-15 | DIODE HZM6.8ZWA1TL | | | |
| D316 | 8-719-071-15 | DIODE HZM6.8ZWA1TL | | | |
| D317 | 8-719-071-15 | DIODE HZM6.8ZWA1TL | | | |
| D318 | 8-719-071-15 | DIODE HZM6.8ZWA1TL | | | |
| D320 | 8-719-069-56 | DIODE UDZSTE-176.2B | | | |

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| D321 | 8-719-083-63 | DIODE UDZSTE-1713B | |
| D323 | 8-719-069-56 | DIODE UDZSTE-176.2B | |
| D324 | 8-719-083-63 | DIODE UDZSTE-1713B | |
| D325 | 8-719-988-61 | DIODE 1SS355TE-17 | |
| D326 | 8-719-988-61 | DIODE 1SS355TE-17 | |
| D327 | 8-719-988-61 | DIODE 1SS355TE-17 | |
| | | < FERRITE BEAD > | |
| FB301 | 1-414-553-11 | FERRITE 0uH | |
| FB302 | 1-414-553-11 | FERRITE 0uH | |
| FB303 | 1-414-553-11 | FERRITE 0uH | |
| FB304 | 1-414-553-11 | FERRITE 0uH | |
| FB305 | 1-414-553-11 | FERRITE 0uH | |
| FB306 | 1-414-553-11 | FERRITE 0uH | |
| FB307 | 1-414-553-11 | FERRITE 0uH | |
| FB308 | 1-414-553-11 | FERRITE 0uH | |
| FB309 | 1-414-553-11 | FERRITE 0uH | |
| FB310 | 1-414-553-11 | FERRITE 0uH | |
| FB311 | 1-414-553-11 | FERRITE 0uH | |
| FB312 | 1-414-553-11 | FERRITE 0uH | |
| FB313 | 1-414-553-11 | FERRITE 0uH | |
| FB314 | 1-414-553-11 | FERRITE 0uH | |
| FB315 | 1-414-553-11 | FERRITE 0uH | |
| FB316 | 1-414-553-11 | FERRITE 0uH | |
| FB317 | 1-414-553-11 | FERRITE 0uH | |
| FB318 | 1-414-553-11 | FERRITE 0uH | |
| | | < FILTER > | |
| FL101 | 1-233-893-21 | FILTER, CHIP EMI | |
| FL102 | 1-233-893-21 | FILTER, CHIP EMI | |
| FL103 | 1-233-893-21 | FILTER, CHIP EMI | |
| FL104 | 1-795-708-21 | FILTER, LOW PASS (6.75MHz) | |
| FL105 | 1-795-708-21 | FILTER, LOW PASS (6.75MHz) | |
| FL106 | 1-795-708-21 | FILTER, LOW PASS (6.75MHz) | |
| FL107 | 1-795-708-21 | FILTER, LOW PASS (6.75MHz) | |
| FL108 | 1-795-708-21 | FILTER, LOW PASS (6.75MHz) | |
| FL109 | 1-795-708-21 | FILTER, LOW PASS (6.75MHz) | |
| FL110 | 1-795-280-11 | FILTER, LOW PASS (13.5MHz) | |
| FL111 | 1-795-280-11 | FILTER, LOW PASS (13.5MHz) | |
| FL112 | 1-795-280-11 | FILTER, LOW PASS (13.5MHz) | |
| FL113 | 1-233-893-21 | FILTER, CHIP EMI | |
| FL114 | 1-233-893-21 | FILTER, CHIP EMI | |
| FL115 | 1-233-893-21 | FILTER, CHIP EMI | |
| | | < IC > | |
| IC101 | 8-759-711-85 | IC NJM4580E-D-TE2 | |
| IC102 | 6-701-820-01 | IC LA73053-TLM-E | |
| IC103 | 8-759-684-23 | IC AD8058ARM-REEL | |
| IC104 | 8-759-684-23 | IC AD8058ARM-REEL | |
| IC105 | 8-759-684-23 | IC AD8058ARM-REEL | |
| IC106 | 8-759-684-21 | IC AD8057ART-REEL7 | |
| IC301 | 8-759-684-23 | IC AD8058ARM-REEL | |
| IC302 | 8-759-684-23 | IC AD8058ARM-REEL | |
| IC303 | 8-759-684-23 | IC AD8058ARM-REEL | |
| IC304 | 8-759-684-23 | IC AD8058ARM-REEL | |
| | | < JACK > | |
| J101 | 1-785-867-21 | JACK, PIN 1P (VIDEO OUT) | |
| J102 | 1-794-198-21 | CONNECTOR, S TERMINAL (S VIDEO OUT) | |
| J103 | 1-794-731-11 | JACK, PIN 1P (COMPONENT VIDEO OUT Y) | |
| J104 | 1-794-732-11 | JACK, PIN 1P (COMPONENT VIDEO OUT $P_B/C_B$) | |
| J105 | 1-794-733-11 | JACK, PIN 1P (COMPONENT VIDEO OUT $P_R/C_R$) | |
| | | < COIL > | |
| L101 | 1-419-387-21 | INDUCTOR 100uH | |
| L102 | 1-419-387-21 | INDUCTOR 100uH | |
| L103 | 1-419-387-21 | INDUCTOR 100uH | |
| L104 | 1-419-387-21 | INDUCTOR 100uH | |
| L105 | 1-419-387-21 | INDUCTOR 100uH | |
| L106 | 1-419-387-21 | INDUCTOR 100uH | |
| L107 | 1-419-387-21 | INDUCTOR 100uH | |
| L108 | 1-419-387-21 | INDUCTOR 100uH | |
| L109 | 1-412-064-11 | INDUCTOR 100uH | |
| L110 | 1-412-064-11 | INDUCTOR 100uH | |
| L302 | 1-419-387-21 | INDUCTOR 100uH | |
| L303 | 1-419-387-21 | INDUCTOR 100Uh | |
| | | < TRANSISTOR > | |
| Q101 | 8-729-424-08 | TRANSISTOR UN2111-TX | |
| Q102 | 8-729-421-19 | TRANSISTOR UN2213-TX | |
| Q103 | 8-729-230-49 | TRANSISTOR 2SC2712-YG-TE85L | |
| Q104 | 8-729-230-49 | TRANSISTOR 2SC2712-YG-TE85L | |
| Q105 | 8-729-230-49 | TRANSISTOR 2SC2712-YG-TE85L | |
| Q106 | 8-729-230-49 | TRANSISTOR 2SC2712-YG-TE85L | |
| Q107 | 8-729-230-49 | TRANSISTOR 2SC2712-YG-TE85L | |
| Q108 | 8-729-230-49 | TRANSISTOR 2SC2712-YG-TE85L | |
| Q109 | 8-729-421-19 | TRANSISTOR UN2213-TX | |
| Q110 | 8-729-421-19 | TRANSISTOR UN2213-TX | |
| Q111 | 8-729-224-62 | TRANSISTOR 2SK246GR-TPE2 | |
| Q112 | 8-729-052-95 | TRANSISTOR 2SC5171 | |
| Q113 | 8-729-052-94 | TRANSISTOR 2SA1930 | |
| Q114 | 8-729-216-22 | TRANSISTOR 2SA1162-YG-TE85L | |
| Q115 | 8-729-216-22 | TRANSISTOR 2SA1162-YG-TE85L | |
| Q116 | 8-729-216-22 | TRANSISTOR 2SA1162-YG-TE85L | |
| Q117 | 8-729-216-22 | TRANSISTOR 2SA1162-YG-TE85L | |
| Q118 | 8-729-216-22 | TRANSISTOR 2SA1162-YG-TE85L | |
| Q119 | 8-729-216-22 | TRANSISTOR 2SA1162-YG-TE85L | |
| Q120 | 8-729-216-22 | TRANSISTOR 2SA1162-YG-TE85L | |
| Q121 | 8-729-216-22 | TRANSISTOR 2SA1162-YG-TE85L | |
| Q122 | 8-729-216-22 | TRANSISTOR 2SA1162-YG-TE85L | |
| Q123 | 8-729-230-49 | TRANSISTOR 2SC2712-YG-TE85L | |
| Q124 | 8-729-230-49 | TRANSISTOR 2SC2712-YG-TE85L | |
| Q125 | 8-729-230-49 | TRANSISTOR 2SC2712-YG-TE85L | |
| Q126 | 8-729-216-22 | TRANSISTOR 2SA1162-YG-TE85L | |
| Q127 | 8-729-216-22 | TRANSISTOR 2SA1162-YG-TE85L | |
| Q128 | 8-729-216-22 | TRANSISTOR 2SA1162-YG-TE85L | |
| Q129 | 8-729-421-19 | TRANSISTOR UN2213-TX | |
| Q130 | 8-729-421-19 | TRANSISTOR UN2213-TX | |
| Q131 | 8-729-424-08 | TRANSISTOR UN2111-TX | |
| Q132 | 8-729-424-08 | TRANSISTOR UN2111-TX | |
| Q133 | 8-729-421-19 | TRANSISTOR UN2213-TX | |
| Q134 | 8-729-421-19 | TRANSISTOR UN2213-TX | |
| Q135 | 8-729-424-08 | TRANSISTOR UN2111-TX | |
| Q136 | 8-729-422-27 | TRANSISTOR 2SD601A-QRS-TX | |
| Q137 | 8-729-424-08 | TRANSISTOR UN2111-TX | |
| Q138 | 8-729-141-73 | TRANSISTOR 2SD1938 (F)-S (TX).SO | |
| Q139 | 8-729-141-73 | TRANSISTOR 2SD1938 (F)-S (TX).SO | |
| Q140 | 8-729-141-73 | TRANSISTOR 2SD1938 (F)-S (TX).SO | |
| Q141 | 8-729-216-22 | TRANSISTOR 2SA1162-YG-TE85L | |
| Q142 | 8-729-216-22 | TRANSISTOR 2SA1162-YG-TE85L | |
| Q143 | 8-729-216-22 | TRANSISTOR 2SA1162-YG-TE85L | |

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| Q301 | 8-729-421-19 | TRANSISTOR UN2213-TX | |
| Q302 | 8-729-424-08 | TRANSISTOR UN2111-TX | |
| Q303 | 8-729-421-19 | TRANSISTOR UN2213-TX | |
| Q304 | 8-729-424-08 | TRANSISTOR UN2111-TX | |
| Q305 | 8-729-421-22 | TRANSISTOR UN2211-TX | |
| Q306 | 8-729-421-19 | TRANSISTOR UN2213-TX | |
| Q307 | 8-729-424-08 | TRANSISTOR UN2111-TX | |
| Q309 | 8-729-422-27 | TRANSISTOR 2SD601A-QRS-TX | |
| Q312 | 8-729-422-27 | TRANSISTOR 2SD601A-QRS-TX | |
| Q313 | 8-729-422-27 | TRANSISTOR 2SD601A-QRS-TX | |
| Q314 | 8-729-421-19 | TRANSISTOR UN2213-TX | |
| Q315 | 8-729-422-27 | TRANSISTOR 2SD601A-QRS-TX | |
| Q316 | 8-729-424-08 | TRANSISTOR UN2111-TX | |
| Q317 | 8-729-424-08 | TRANSISTOR UN2111-TX | |
| Q318 | 8-729-424-08 | TRANSISTOR UN2111-TX | |
| Q319 | 8-729-046-97 | TRANSISTOR 2SD1938 (F)-T (TX).SO | |
| Q320 | 8-729-046-97 | TRANSISTOR 2SD1938 (F)-T (TX).SO | |
| Q321 | 8-729-046-97 | TRANSISTOR 2SD1938 (F)-T (TX).SO | |
| Q322 | 8-729-046-97 | TRANSISTOR 2SD1938 (F)-T (TX).SO | |
| | | < RESISTOR > | |
| R101 | 1-216-295-91 | SHORT CHIP 0 | |
| R102 | 1-216-049-11 | RES-CHIP 1K 5% | 1/10W |
| R103 | 1-216-009-91 | RES-CHIP 22 5% | 1/10W |
| R104 | 1-216-009-91 | RES-CHIP 22 5% | 1/10W |
| R105 | 1-216-009-91 | RES-CHIP 22 5% | 1/10W |
| R106 | 1-216-009-91 | RES-CHIP 22 5% | 1/10W |
| R107 | 1-216-009-91 | RES-CHIP 22 5% | 1/10W |
| R108 | 1-216-009-91 | RES-CHIP 22 5% | 1/10W |
| R109 | 1-216-049-11 | RES-CHIP 1K 5% | 1/10W |
| R110 | 1-216-049-11 | RES-CHIP 1K 5% | 1/10W |
| R111 | 1-216-049-11 | RES-CHIP 1K 5% | 1/10W |
| R112 | 1-216-049-11 | RES-CHIP 1K 5% | 1/10W |
| R113 | 1-216-049-11 | RES-CHIP 1K 5% | 1/10W |
| R114 | 1-216-049-11 | RES-CHIP 1K 5% | 1/10W |
| R115 | 1-216-081-00 | RES-CHIP 22K 5% | 1/10W |
| R116 | 1-211-966-11 | METAL CHIP 39 0.5% | 1/10W |
| R117 | 1-211-966-11 | METAL CHIP 39 0.5% | 1/10W |
| R118 | 1-211-966-11 | METAL CHIP 39 0.5% | 1/10W |
| R119 | 1-211-966-11 | METAL CHIP 39 0.5% | 1/10W |
| R120 | 1-211-966-11 | METAL CHIP 39 0.5% | 1/10W |
| R121 | 1-211-966-11 | METAL CHIP 39 0.5% | 1/10W |
| R122 | 1-216-633-11 | METAL CHIP 180 0.5% | 1/10W |
| R123 | 1-216-633-11 | METAL CHIP 180 0.5% | 1/10W |
| R124 | 1-216-633-11 | METAL CHIP 180 0.5% | 1/10W |
| R125 | 1-216-633-11 | METAL CHIP 180 0.5% | 1/10W |
| R126 | 1-216-633-11 | METAL CHIP 180 0.5% | 1/10W |
| R127 | 1-216-633-11 | METAL CHIP 180 0.5% | 1/10W |
| R128 | 1-216-025-11 | RES-CHIP 100 5% | 1/10W |
| R129 | 1-216-025-11 | RES-CHIP 100 5% | 1/10W |
| R130 | 1-216-025-11 | RES-CHIP 100 5% | 1/10W |
| R131 | 1-216-025-11 | RES-CHIP 100 5% | 1/10W |
| R132 | 1-208-790-11 | METAL CHIP 2.2K 0.5% | 1/10W |
| R133 | 1-208-790-11 | METAL CHIP 2.2K 0.5% | 1/10W |
| R134 | 1-208-790-11 | METAL CHIP 2.2K 0.5% | 1/10W |
| R135 | 1-208-790-11 | METAL CHIP 2.2K 0.5% | 1/10W |
| R136 | 1-208-790-11 | METAL CHIP 2.2K 0.5% | 1/10W |
| R137 | 1-208-790-11 | METAL CHIP 2.2K 0.5% | 1/10W |
| R138 | 1-216-049-11 | RES-CHIP 1K 5% | 1/10W |
| R139 | 1-216-049-11 | RES-CHIP 1K 5% | 1/10W |
| R140 | 1-216-049-11 | RES-CHIP 1K 5% | 1/10W |
| R141 | 1-216-049-11 | RES-CHIP 1K 5% | 1/10W |
| R142 | 1-216-049-11 | RES-CHIP 1K 5% | 1/10W |
| R143 | 1-216-049-11 | RES-CHIP 1K 5% | 1/10W |
| R144 | 1-216-061-91 | RES-CHIP 3.3K 5% | 1/10W |
| R145 | 1-216-061-91 | RES-CHIP 3.3K 5% | 1/10W |
| R146 | 1-216-009-91 | RES-CHIP 22 5% | 1/10W |
| R147 | 1-216-009-91 | RES-CHIP 22 5% | 1/10W |
| R148 | 1-216-009-91 | RES-CHIP 22 5% | 1/10W |
| R149 | 1-216-049-11 | RES-CHIP 1K 5% | 1/10W |
| R150 | 1-216-049-11 | RES-CHIP 1K 5% | 1/10W |
| R151 | 1-216-049-11 | RES-CHIP 1K 5% | 1/10W |
| R152 | 1-216-009-91 | RES-CHIP 22 5% | 1/10W |
| R153 | 1-216-009-91 | RES-CHIP 22 5% | 1/10W |
| R154 | 1-216-009-91 | RES-CHIP 22 5% | 1/10W |
| R155 | 1-216-045-00 | RES-CHIP 680 5% | 1/10W |
| R156 | 1-216-045-00 | RES-CHIP 680 5% | 1/10W |
| R157 | 1-216-045-00 | RES-CHIP 680 5% | 1/10W |
| R158 | 1-211-961-91 | METAL CHIP 24 0.5% | 1/10W |
| R159 | 1-211-961-91 | METAL CHIP 24 0.5% | 1/10W |
| R160 | 1-211-961-91 | METAL CHIP 24 0.5% | 1/10W |
| R161 | 1-208-760-11 | METAL CHIP 120 0.5% | 1/10W |
| R162 | 1-208-760-11 | METAL CHIP 120 0.5% | 1/10W |
| R163 | 1-208-760-11 | METAL CHIP 120 0.5% | 1/10W |
| R164 | 1-208-790-11 | METAL CHIP 2.2K 0.5% | 1/10W |
| R165 | 1-208-790-11 | METAL CHIP 2.2K 0.5% | 1/10W |
| R166 | 1-208-790-11 | METAL CHIP 2.2K 0.5% | 1/10W |
| R167 | 1-216-049-11 | RES-CHIP 1K 5% | 1/10W |
| R168 | 1-216-049-11 | RES-CHIP 1K 5% | 1/10W |
| R169 | 1-216-049-11 | RES-CHIP 1K 5% | 1/10W |
| R170 | 1-216-049-11 | RES-CHIP 1K 5% | 1/10W |
| R171 | 1-216-049-11 | RES-CHIP 1K 5% | 1/10W |
| R172 | 1-216-049-11 | RES-CHIP 1K 5% | 1/10W |
| R173 | 1-216-049-11 | RES-CHIP 1K 5% | 1/10W |
| R176 | 1-216-065-91 | RES-CHIP 4.7K 5% | 1/10W |
| R177 | 1-208-790-11 | METAL CHIP 2.2K 0.5% | 1/10W |
| R178 | 1-216-073-91 | RES-CHIP 10K 5% | 1/10W |
| R179 | 1-208-790-11 | METAL CHIP 2.2K 0.5% | 1/10W |
| R180 | 1-216-049-11 | RES-CHIP 1K 5% | 1/10W |
| R182 | 1-216-009-91 | RES-CHIP 22 5% | 1/10W |
| R183 | 1-216-009-91 | RES-CHIP 22 5% | 1/10W |
| R184 | 1-216-009-91 | RES-CHIP 22 5% | 1/10W |
| R185 | 1-216-009-91 | RES-CHIP 22 5% | 1/10W |
| R186 | 1-216-009-91 | RES-CHIP 22 5% | 1/10W |
| R187 | 1-216-009-91 | RES-CHIP 22 5% | 1/10W |
| R188 | 1-216-009-91 | RES-CHIP 22 5% | 1/10W |
| R189 | 1-216-009-91 | RES-CHIP 22 5% | 1/10W |
| R190 | 1-216-009-91 | RES-CHIP 22 5% | 1/10W |
| R196 | 1-216-049-11 | RES-CHIP 1K 5% | 1/10W |
| R198 | 1-216-089-91 | RES-CHIP 47K 5% | 1/10W |
| R202 | 1-216-073-91 | RES-CHIP 10K 5% | 1/10W |
| R203 | 1-216-073-91 | RES-CHIP 10K 5% | 1/10W |
| R204 | 1-216-073-91 | RES-CHIP 10K 5% | 1/10W |
| R205 | 1-216-049-11 | RES-CHIP 1K 5% | 1/10W |
| R206 | 1-216-049-11 | RES-CHIP 1K 5% | 1/10W |
| R207 | 1-216-049-11 | RES-CHIP 1K 5% | 1/10W |
| R208 | 1-216-001-00 | RES-CHIP 10 5% | 1/10W |
| R209 | 1-216-001-00 | RES-CHIP 10 5% | 1/10W |
| R210 | 1-216-001-00 | RES-CHIP 10 5% | 1/10W |
| R220 | 1-216-001-00 | RES-CHIP 10 5% | 1/10W |

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| R221 | 1-216-001-00 | RES-CHIP | 10 | 5% | 1/10W |
| R222 | 1-216-001-00 | RES-CHIP | 10 | 5% | 1/10W |
| R223 | 1-208-790-11 | METAL CHIP | 2.2K | 0.5% | 1/10W |
| R224 | 1-208-790-11 | METAL CHIP | 2.2K | 0.5% | 1/10W |
| R225 | 1-208-790-11 | METAL CHIP | 2.2K | 0.5% | 1/10W |
| R226 | 1-208-790-11 | METAL CHIP | 2.2K | 0.5% | 1/10W |
| R227 | 1-208-790-11 | METAL CHIP | 2.2K | 0.5% | 1/10W |
| R228 | 1-208-790-11 | METAL CHIP | 2.2K | 0.5% | 1/10W |
| R229 | 1-216-295-91 | SHORT CHIP | 0 | | |
| R230 | 1-216-295-91 | SHORT CHIP | 0 | | |
| R231 | 1-216-295-91 | SHORT CHIP | 0 | | |
| R240 | 1-216-073-91 | RES-CHIP | 10K | 5% | 1/10W |
| R257 | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| R258 | 1-216-295-91 | SHORT CHIP | 0 | | |
| R261 | 1-216-295-91 | SHORT CHIP | 0 | | |
| R263 | 1-216-295-91 | SHORT CHIP | 0 | | |
| R264 | 1-216-295-91 | SHORT CHIP | 0 | | |
| R265 | 1-216-295-91 | SHORT CHIP | 0 | | |
| R266 | 1-216-295-91 | SHORT CHIP | 0 | | |
| R267 | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| R273 | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| R301 | 1-216-065-91 | RES-CHIP | 4.7K | 5% | 1/10W |
| R302 | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| R303 | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| R304 | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| R305 | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| R306 | 1-216-089-91 | RES-CHIP | 47K | 5% | 1/10W |
| R307 | 1-216-089-91 | RES-CHIP | 47K | 5% | 1/10W |
| R308 | 1-216-089-91 | RES-CHIP | 47K | 5% | 1/10W |
| R309 | 1-216-039-00 | RES-CHIP | 390 | 5% | 1/10W |
| R310 | 1-216-039-00 | RES-CHIP | 390 | 5% | 1/10W |
| R311 | 1-216-039-00 | RES-CHIP | 390 | 5% | 1/10W |
| R312 | 1-216-039-00 | RES-CHIP | 390 | 5% | 1/10W |
| R313 | 1-216-089-91 | RES-CHIP | 47K | 5% | 1/10W |
| R314 | 1-216-073-91 | RES-CHIP | 10K | 5% | 1/10W |
| R315 | 1-216-073-91 | RES-CHIP | 10K | 5% | 1/10W |
| R316 | 1-216-073-91 | RES-CHIP | 10K | 5% | 1/10W |
| R317 | 1-216-073-91 | RES-CHIP | 10K | 5% | 1/10W |
| R318 | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| R319 | 1-216-057-00 | RES-CHIP | 2.2K | 5% | 1/10W |
| R320 | 1-216-047-91 | RES-CHIP | 820 | 5% | 1/10W |
| R321 | 1-216-057-00 | RES-CHIP | 2.2K | 5% | 1/10W |
| R322 | 1-216-057-00 | RES-CHIP | 2.2K | 5% | 1/10W |
| R323 | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| R324 | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| R325 | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| R326 | 1-216-033-00 | RES-CHIP | 220 | 5% | 1/10W |
| R327 | 1-216-033-00 | RES-CHIP | 220 | 5% | 1/10W |
| R328 | 1-216-033-00 | RES-CHIP | 220 | 5% | 1/10W |
| R329 | 1-216-033-00 | RES-CHIP | 220 | 5% | 1/10W |
| R335 | 1-216-065-91 | RES-CHIP | 4.7K | 5% | 1/10W |
| R338 | 1-216-065-91 | RES-CHIP | 4.7K | 5% | 1/10W |
| R339 | 1-216-065-91 | RES-CHIP | 4.7K | 5% | 1/10W |
| R340 | 1-216-295-91 | SHORT CHIP | 0 | | |
| R342 | 1-216-025-11 | RES-CHIP | 100 | 5% | 1/10W |
| R343 | 1-216-017-91 | RES-CHIP | 47 | 5% | 1/10W |
| R345 | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| R346 | 1-216-001-00 | RES-CHIP | 10 | 5% | 1/10W |
| R347 | 1-216-001-00 | RES-CHIP | 10 | 5% | 1/10W |
| R348 | 1-216-001-00 | RES-CHIP | 10 | 5% | 1/10W |

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| R349 | 1-216-001-00 | RES-CHIP | 10 | 5% | 1/10W |
| R350 | 1-216-001-00 | RES-CHIP | 10 | 5% | 1/10W |
| R351 | 1-216-001-00 | RES-CHIP | 10 | 5% | 1/10W |
| R352 | 1-216-001-00 | RES-CHIP | 10 | 5% | 1/10W |
| R353 | 1-216-001-00 | RES-CHIP | 10 | 5% | 1/10W |
| R354 | 1-208-790-11 | METAL CHIP | 2.2K | 0.5% | 1/10W |
| R355 | 1-208-790-11 | METAL CHIP | 2.2K | 0.5% | 1/10W |
| R356 | 1-208-790-11 | METAL CHIP | 2.2K | 0.5% | 1/10W |
| R357 | 1-208-790-11 | METAL CHIP | 2.2K | 0.5% | 1/10W |
| R358 | 1-208-790-11 | METAL CHIP | 2.2K | 0.5% | 1/10W |
| R359 | 1-208-790-11 | METAL CHIP | 2.2K | 0.5% | 1/10W |
| R360 | 1-216-660-11 | METAL CHIP | 2.4K | 0.5% | 1/10W |
| R361 | 1-208-790-11 | METAL CHIP | 2.2K | 0.5% | 1/10W |
| R362 | 1-216-295-91 | SHORT CHIP | 0 | | |
| R364 | 1-216-295-91 | SHORT CHIP | 0 | | |
| R366 | 1-216-295-91 | SHORT CHIP | 0 | | |
| R368 | 1-216-295-91 | SHORT CHIP | 0 | | |
| R379 | 1-216-295-91 | SHORT CHIP | 0 | | |

< RELAY >

| | | |
|---|---|---|
| RY101 | 1-755-184-11 | RELAY |
| RY102 | 1-755-184-11 | RELAY |
| RY301 | 1-755-184-11 | RELAY |
| RY302 | 1-755-184-11 | RELAY |
| RY303 | 1-755-184-11 | RELAY |
| RY304 | 1-755-184-11 | RELAY |
| RY305 | 1-755-184-11 | RELAY |
| RY306 | 1-755-184-11 | RELAY |
| RY307 | 1-755-184-11 | RELAY |

< SWITCH >

S101 1-692-989-11 SWITCH, SLIDE (COMMAND MODE)

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A-6061-088-A FL-129 (UC2) BOARD, COMPLETE (US, CND)
A-6061-106-A FL-129 (EC1) BOARD, COMPLETE
(AEP, UK, KR)

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(Ref. No. 4, 000 Series)

3-077-308-01 HOLDER, FL
3-077-329-01 HOLDER, LED

< BUZZER >

BZ201 1-529-986-11 BUZZER, VOLTAGE

< CAPACITOR >

| | | | | | |
|---|---|---|---|---|---|
| C201 | 1-124-589-11 | ELECT | 47uF | 20% | 16V |
| C203 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C205 | 1-124-589-11 | ELECT | 47uF | 20% | 16V |
| C207 | 1-128-131-11 | ELECT | 22uF | 20% | 50V |
| C208 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| | | | | | (US, CND) |
| C209 | 1-137-150-11 | FILM | 0.01uF | 5% | 100V |
| C210 | 1-163-009-91 | CERAMIC CHIP | 0.001uF | 10% | 50V |
| | | | | | (US, CND) |
| C211 | 1-115-339-11 | CERAMIC CHIP | 0.1uF | 10% | 50V |
| C212 | 1-115-339-11 | CERAMIC CHIP | 0.1uF | 10% | 50V |
| C213 | 1-128-131-11 | ELECT | 22uF | 20% | 50V |
| C214 | 1-128-131-11 | ELECT | 22uF | 20% | 50V |
| C216 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |

# FL-129

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| C217 | 1-128-131-11 | ELECT | 22uF | 20% | 50V |
| C218 | 1-115-339-11 | CERAMIC CHIP | 0.1uF | 10% | 50V |
| C219 | 1-164-004-11 | CERAMIC CHIP | 0.1uF | 10% | 25V |
| C220 | 1-115-339-11 | CERAMIC CHIP | 0.1uF | 10% | 50V |
| C221 | 1-115-339-11 | CERAMIC CHIP | 0.1uF | 10% | 50V |
| C222 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C223 | 1-126-157-11 | ELECT | 10uF | 20% | 16V |
| C224 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C225 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| | | < CONNECTOR > | | | |
| CN201 | 1-506-492-11 | PIN, CONNECTOR 13P | | | |
| CN202 | 1-750-199-11 | CONNECTOR, BOARD TO BOARD 18P | | | |
| | | < DIODE > | | | |
| D204 | 8-719-075-69 | DIODE SPR-39MVWFMN (I/⏻) | | | |
| D205 | 8-719-914-43 | DIODE DAN202K-T-146 (US, CND) | | | |
| D206 | 8-719-041-97 | DIODE MA113- (TX) | | | |
| D207 | 8-719-041-97 | DIODE MA113- (TX) | | | |
| D208 | 8-719-041-97 | DIODE MA113- (TX) | | | |
| D209 | 8-719-041-97 | DIODE MA113- (TX) | | | |
| D210 | 8-719-042-70 | DIODE MA8300-L-TX | | | |
| D211 | 8-719-422-67 | DIODE MA8062-H-TX | | | |
| D212 | 8-719-056-06 | DIODE SLR-342DCT32 (VIDEO OFF) | | | |
| D213 | 8-719-056-06 | DIODE SLR-342DCT32 (FL OFF) | | | |
| D216 | 8-719-081-64 | DIODE NSCW100-BST | | | |
| | | < IC > | | | |
| IC201 | 8-749-019-10 | IC GP1UD28SXK | | | |
| IC202 | 8-759-710-82 | IC NJM2406F-TE2 (US, CND) | | | |
| IC203 | 6-801-920-01 | IC TMP86CK74AFG-4FC2 | | | |
| IC205 | 6-702-526-01 | IC BD4730G-TR | | | |
| | | < COIL > | | | |
| L201 | 1-400-096-21 | INDUCTOR | 47uH | | |
| | | < FLUORESCENT INDICATOR > | | | |
| ND201 | 1-518-806-21 | TUBE, FLUORESCENT INDICATOR | | | |
| | | < TRANSISTOR > | | | |
| Q203 | 8-729-421-19 | TRANSISTOR UN2213-TX | | | |
| Q204 | 8-729-422-27 | TRANSISTOR 2SD601A-QRS-TX | | | |
| Q205 | 8-729-808-01 | TRANSISTOR 2SD1622-S-TD | | | |
| Q206 | 8-729-808-01 | TRANSISTOR 2SD1622-S-TD | | | |
| Q207 | 8-729-424-02 | TRANSISTOR 2SB709A-QRS-TX (US, CND) | | | |
| Q208 | 8-729-424-18 | TRANSISTOR UN2113-TX (US, CND) | | | |
| Q209 | 8-729-804-41 | TRANSISTOR 2SB1122-ST-TD | | | |
| Q211 | 8-729-900-52 | TRANSISTOR UN2214-TX | | | |
| Q212 | 8-729-422-27 | TRANSISTOR 2SD601A-QRS-TX | | | |
| Q213 | 8-729-900-52 | TRANSISTOR UN2214-TX | | | |
| | | < RESISTOR > | | | |
| R201 | 1-216-065-91 | RES-CHIP | 4.7K | 5% | 1/10W |
| R203 | 1-216-295-91 | SHORT CHIP | 0 (US, CND) | | |
| R204 | 1-216-017-91 | RES-CHIP | 47 | 5% | 1/10W |
| R209 | 1-216-097-11 | RES-CHIP | 100K | 5% | 1/10W |
| R215 | 1-216-069-00 | RES-CHIP | 6.8K | 5% | 1/10W |
| R216 | 1-216-073-91 | RES-CHIP | 10K | 5% | 1/10W |
| R217 | 1-216-069-00 | RES-CHIP | 6.8K | 5% | 1/10W |
| R218 | 1-216-081-00 | RES-CHIP | 22K | 5% | 1/10W<br>(US, CND) |
| R219 | 1-216-081-00 | RES-CHIP | 22K | 5% | 1/10W<br>(US, CND) |
| R221 | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| R222 | 1-216-073-91 | RES-CHIP | 10K | 5% | 1/10W<br>(US, CND) |
| R223 | 1-216-033-00 | RES-CHIP | 220 | 5% | 1/10W |
| R224 | 1-216-061-91 | RES-CHIP | 3.3K | 5% | 1/10W<br>(US, CND) |
| R225 | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W<br>(US, CND) |
| R226 | 1-216-025-11 | RES-CHIP | 100 | 5% | 1/10W |
| R227 | 1-216-089-91 | RES-CHIP | 47K | 5% | 1/10W |
| R234 | 1-216-025-11 | RES-CHIP | 100 | 5% | 1/10W |
| R235 | 1-216-057-00 | RES-CHIP | 2.2K | 5% | 1/10W<br>(US, CND) |
| R240 | 1-216-025-11 | RES-CHIP | 100 | 5% | 1/10W |
| R241 | 1-216-025-11 | RES-CHIP | 100 | 5% | 1/10W |
| R242 | 1-216-073-91 | RES-CHIP | 10K | 5% | 1/10W |
| R243 | 1-216-063-91 | RES-CHIP | 3.9K | 5% | 1/10W |
| R244 | 1-216-073-91 | RES-CHIP | 10K | 5% | 1/10W |
| R245 | 1-216-073-91 | RES-CHIP | 10K | 5% | 1/10W |
| R247 | 1-216-073-91 | RES-CHIP | 10K | 5% | 1/10W |
| R248 | 1-216-073-91 | RES-CHIP | 10K | 5% | 1/10W |
| R250 | 1-216-073-91 | RES-CHIP | 10K | 5% | 1/10W |
| R252 | 1-216-073-91 | RES-CHIP | 10K | 5% | 1/10W |
| R253 | 1-216-013-00 | RES-CHIP | 33 | 5% | 1/10W |
| R255 | 1-216-073-91 | RES-CHIP | 10K | 5% | 1/10W |
| R256 | 1-216-027-00 | RES-CHIP | 120 | 5% | 1/10W |
| R257 | 1-216-025-11 | RES-CHIP | 100 | 5% | 1/10W |
| R259 | 1-216-295-91 | SHORT CHIP | 0 | | |
| R260 | 1-216-025-11 | RES-CHIP | 100 | 5% | 1/10W |
| R262 | 1-216-073-91 | RES-CHIP | 10K | 5% | 1/10W |
| R263 | 1-216-073-91 | RES-CHIP | 10K | 5% | 1/10W |
| R264 | 1-216-073-91 | RES-CHIP | 10K | 5% | 1/10W |
| R265 | 1-216-073-91 | RES-CHIP | 10K | 5% | 1/10W |
| R266 | 1-216-065-91 | RES-CHIP | 4.7K | 5% | 1/10W |
| R267 | 1-216-073-91 | RES-CHIP | 10K | 5% | 1/10W |
| R268 | 1-216-073-91 | RES-CHIP | 10K | 5% | 1/10W |
| R269 | 1-216-073-91 | RES-CHIP | 10K | 5% | 1/10W |
| R270 | 1-216-073-91 | RES-CHIP | 10K | 5% | 1/10W |
| R271 | 1-216-295-91 | SHORT CHIP | 0 | | |
| R272 | 1-216-295-91 | SHORT CHIP | 0 | | |
| R273 | 1-216-295-91 | SHORT CHIP | 0 | | |
| R276 | 1-216-041-00 | RES-CHIP | 470 | 5% | 1/10W |
| | | < SWITCH > | | | |
| S201 | 1-762-799-11 | SWITCH, KEYBOARD (I/⏻) | | | |
| | | < TRANSFORMER > | | | |
| T201 | 1-437-887-21 | TRANSFORMER, DC-DC CONVERTER | | | |
| | | < VIBRATOR > | | | |
| X201 | 1-781-472-21 | VIBRATOR, CERAMIC (8MHz) | | | |

FR-190 BOARD
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(Ref. No. 2, 000 Series)

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| | | < CONNECTOR > | | | |
| CN501 | 1-794-506-11 | CONNECTOR, FFC/FPC 13P | | | |
| CN502 | 1-750-190-11 | CONNECTOR, BOARD TO BOARD 18P | | | |
| * CN503 | 1-506-470-11 | PIN, CONNECTOR 5P | | | |
| | | < DIODE > | | | |
| D501 | 8-719-056-06 | DIODE SLR-342DCT32 (❚❚) | | | |
| D502 | 8-719-056-07 | DIODE SLR-342MCT31 (▷) | | | |
| | | < TRANSISTOR > | | | |
| Q501 | 8-729-900-52 | TRANSISTOR UN2214-TX | | | |
| Q502 | 8-729-900-52 | TRANSISTOR UN2214-TX | | | |
| | | < RESISTOR > | | | |
| R506 | 1-216-073-91 | RES-CHIP | 10K | 5% | 1/10W |
| R508 | 1-216-059-00 | RES-CHIP | 2.7K | 5% | 1/10W |
| R511 | 1-216-063-91 | RES-CHIP | 3.9K | 5% | 1/10W |
| R512 | 1-216-025-11 | RES-CHIP | 100 | 5% | 1/10W |
| R513 | 1-216-025-11 | RES-CHIP | 100 | 5% | 1/10W |
| | | < SWITCH > | | | |
| S501 | 1-762-799-11 | SWITCH, KEYBOARD (⏏) | | | |
| S502 | 1-762-799-11 | SWITCH, KEYBOARD (▷) | | | |
| S503 | 1-762-799-11 | SWITCH, KEYBOARD (❚❚) | | | |
| S505 | 1-762-799-11 | SWITCH, KEYBOARD (■) | | | |

IF-98 BOARD
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(Ref. No. 4, 000 Series)

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| | | < CAPACITOR > | | | |
| C101 | 1-126-933-11 | ELECT | 100uF | 20% | 16V |
| C102 | 1-164-004-11 | CERAMIC CHIP | 0.1uF | 10% | 25V |
| C103 | 1-126-933-11 | ELECT | 100uF | 20% | 16V |
| C104 | 1-164-004-11 | CERAMIC CHIP | 0.1uF | 10% | 25V |
| | | < CONNECTOR > | | | |
| CN101 | 1-778-317-11 | CONNECTOR, BOARD TO BOARD 13P | | | |
| * CN102 | 1-506-470-11 | PIN, CONNECTOR 5P | | | |
| * CN103 | 1-564-712-11 | PIN, CONNECTOR (SMALL TYPE)10P | | | |
| CN104 | 1-506-472-11 | PIN, CONNECTOR 7P | | | |
| CN105 | 1-506-478-11 | PIN, CONNECTOR 13P | | | |
| | | < EARTH TERMINAL > | | | |
| * ET101 | 1-537-738-21 | TERMINAL, EARTH | | | |
| | | < IC > | | | |
| IC101 | 8-759-832-05 | IC BA18BC0FP-E2 | | | |
| | | < COIL > | | | |
| L101 | 1-456-154-21 | INDUCTOR | 100uH | | |
| L102 | 1-456-154-21 | INDUCTOR | 100uH | | |

LD-115 BOARD
************
(Ref. No. 1, 000 Series)

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| | | < DIODE > | | | |
| D803 | 8-719-080-49 | DIODE LNJ951C4B0S0 (MULTI CHANNEL) | | | |
| D804 | 8-719-080-49 | DIODE LNJ951C4B0S0 (MULTI CHANNEL) | | | |
| | | < RESISTOR > | | | |
| R803 | 1-216-025-11 | RES-CHIP | 100 | 5% | 1/10W |
| R804 | 1-216-025-11 | RES-CHIP | 100 | 5% | 1/10W |

A-6061-079-A MB-107 (UC2) BOARD, COMPLETE (US, CND)
A-6061-102-A MB-107 (EC1) BOARD, COMPLETE (AEP, UK)
A-6061-108-A MB-107 (KR2) BOARD, COMPLETE (KR)
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(Ref. No. 3, 000 Series)

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| | | < CAPACITOR > | | | |
| C101 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V |
| C102 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C103 | 1-126-209-11 | ELECT CHIP | 100uF | 20% | 4V |
| C104 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C105 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C106 | 1-162-916-11 | CERAMIC CHIP | 12PF | 5% | 50V |
| C107 | 1-162-919-11 | CERAMIC CHIP | 22PF | 5% | 50V |
| C108 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C109 | 1-126-209-11 | ELECT CHIP | 100uF | 20% | 4V |
| C111 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C113 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C115 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C118 | 1-165-176-11 | CERAMIC CHIP | 0.047uF | 10% | 16V |
| C120 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C121 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C122 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C123 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V |
| C124 | 1-126-206-11 | ELECT CHIP | 100uF | 20% | 6.3V |
| C125 | 1-126-607-11 | ELECT CHIP | 47uF | 20% | 4V |
| C126 | 1-137-765-21 | ELECT | 47uF | 20% | 16V |
| C127 | 1-126-246-11 | ELECT CHIP | 220uF | 20% | 4V |
| C128 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C129 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V |
| C130 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C201 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C202 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C210 | 1-162-966-11 | CERAMIC CHIP | 0.0022uF | 10% | 50V |
| C211 | 1-162-966-11 | CERAMIC CHIP | 0.0022uF | 10% | 50V |
| C212 | 1-162-966-11 | CERAMIC CHIP | 0.0022uF | 10% | 50V |
| C213 | 1-162-966-11 | CERAMIC CHIP | 0.0022uF | 10% | 50V |
| C214 | 1-164-245-11 | CERAMIC CHIP | 0.015uF | 10% | 25V |
| C215 | 1-162-927-11 | CERAMIC CHIP | 100PF | 5% | 50V |
| C216 | 1-164-230-11 | CERAMIC CHIP | 220PF | 5% | 50V |
| C218 | 1-162-965-11 | CERAMIC CHIP | 0.0015uF | 10% | 50V |
| C219 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V |
| C220 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V |
| C221 | 1-124-779-00 | ELECT CHIP | 10uF | 20% | 16V |
| C225 | 1-162-927-11 | CERAMIC CHIP | 100PF | 5% | 50V |
| C226 | 1-164-230-11 | CERAMIC CHIP | 220PF | 5% | 50V |
| C228 | 1-162-964-11 | CERAMIC CHIP | 0.001uF | 10% | 50V |
| C229 | 1-162-964-11 | CERAMIC CHIP | 0.001uF | 10% | 50V |
| C230 | 1-162-968-11 | CERAMIC CHIP | 0.0047uF | 10% | 50V |

# MB-107

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| C232 | 1-162-968-11 | CERAMIC CHIP | 0.0047uF | 10% | 50V |
| C233 | 1-162-968-11 | CERAMIC CHIP | 0.0047uF | 10% | 50V |
| C234 | 1-165-708-11 | ELECT | 47uF | 20% | 6.3V |
| C235 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C236 | 1-164-739-11 | CERAMIC CHIP | 560PF | 5% | 50V |
| C238 | 1-124-779-00 | ELECT CHIP | 10uF | 20% | 16V |
| C240 | 1-164-677-11 | CERAMIC CHIP | 0.033uF | 10% | 16V |
| C241 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V |
| C242 | 1-165-708-11 | ELECT | 47uF | 20% | 6.3V |
| C243 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C244 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V |
| C245 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C246 | 1-164-677-11 | CERAMIC CHIP | 0.033uF | 10% | 16V |
| C247 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C248 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C249 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C250 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C251 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V |
| C252 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V |
| C253 | 1-162-964-11 | CERAMIC CHIP | 0.001uF | 10% | 50V |
| C254 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C255 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V |
| C256 | 1-165-176-11 | CERAMIC CHIP | 0.047uF | 10% | 16V |
| C257 | 1-165-176-11 | CERAMIC CHIP | 0.047uF | 10% | 16V |
| C258 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C259 | 1-162-964-11 | CERAMIC CHIP | 0.001uF | 10% | 50V |
| C260 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C261 | 1-162-959-11 | CERAMIC CHIP | 330PF | 5% | 50V |
| C262 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V |
| C263 | 1-124-779-00 | ELECT CHIP | 10uF | 20% | 16V |
| C264 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C265 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V |
| C266 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C270 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C271 | 1-137-765-21 | ELECT | 47uF | 20% | 16V |
| C272 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V |
| C273 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V |
| C302 | 1-165-881-21 | ELECT CHIP | 120uF | 20% | 6.3V |
| C303 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V |
| C304 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C305 | 1-162-968-11 | CERAMIC CHIP | 0.0047uF | 10% | 50V |
| C308 | 1-126-206-11 | ELECT CHIP | 100uF | 20% | 6.3V |
| C309 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V |
| C310 | 1-162-927-11 | CERAMIC CHIP | 100PF | 5% | 50V |
| C311 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C312 | 1-110-563-11 | CERAMIC CHIP | 0.068uF | 10% | 16V |
| C313 | 1-164-677-11 | CERAMIC CHIP | 0.033uF | 10% | 16V |
| C314 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C315 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C316 | 1-162-968-11 | CERAMIC CHIP | 0.0047uF | 10% | 50V |
| C317 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V |
| C318 | 1-162-968-11 | CERAMIC CHIP | 0.0047uF | 10% | 50V |
| C319 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C320 | 1-162-968-11 | CERAMIC CHIP | 0.0047uF | 10% | 50V |
| C321 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C322 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C323 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C324 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V |
| C325 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C326 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| C327 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C328 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C329 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C330 | 1-162-968-11 | CERAMIC CHIP | 0.0047uF | 10% | 50V |
| C332 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C333 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C334 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C335 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C337 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C338 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C339 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C340 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C343 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C344 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C401 | 1-126-193-11 | ELECT CHIP | 1uF | 20% | 50V |
| C404 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V |
| C405 | 1-124-779-00 | ELECT CHIP | 10uF | 20% | 16V |
| C407 | 1-124-779-00 | ELECT CHIP | 10uF | 20% | 16V |
| C408 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C410 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C411 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C413 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C414 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C416 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C417 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C418 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C419 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C420 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V |
| C423 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C424 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C426 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C427 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C429 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C430 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C431 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C432 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C433 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C436 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C437 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C444 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C445 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C446 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C449 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C501 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C502 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C503 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C504 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C505 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C508 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C509 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C510 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C511 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C512 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C513 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C514 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C515 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C516 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C517 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C518 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C519 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| C520 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C521 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C522 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C523 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C525 | 1-109-982-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C528 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V |
| C530 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V |
| C532 | 1-165-881-21 | ELECT CHIP | 120uF | 20% | 6.3V |
| C535 | 1-165-881-21 | ELECT CHIP | 120uF | 20% | 6.3V |
| C537 | 1-125-891-11 | CERAMIC CHIP | 0.47uF | 10% | 10V |
| C538 | 1-165-492-21 | ELECT | 100uF | 20% | 10V |
| C539 | 1-162-964-11 | CERAMIC CHIP | 0.001uF | 10% | 50V |
| C543 | 1-162-964-11 | CERAMIC CHIP | 0.001uF | 10% | 50V |
| C601 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V |
| C602 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V |
| C603 | 1-162-964-11 | CERAMIC CHIP | 0.001uF | 10% | 50V |
| C604 | 1-126-607-11 | ELECT CHIP | 47uF | 20% | 4V |
| C605 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C606 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C607 | 1-126-607-11 | ELECT CHIP | 47uF | 20% | 4V |
| C608 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C609 | 1-126-607-11 | ELECT CHIP | 47uF | 20% | 4V |
| C610 | 1-126-607-11 | ELECT CHIP | 47uF | 20% | 4V |
| C611 | 1-126-607-11 | ELECT CHIP | 47uF | 20% | 4V |
| C612 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C613 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C614 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C615 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C616 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C617 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C618 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C619 | 1-126-607-11 | ELECT CHIP | 47uF | 20% | 4V |
| C620 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V |
| C621 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V |
| C622 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V |
| C623 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V |
| C624 | 1-115-467-11 | CERAMIC CHIP | 0.22uF | 10% | 10V |
| C625 | 1-115-467-11 | CERAMIC CHIP | 0.22uF | 10% | 10V |
| C626 | 1-126-206-11 | ELECT CHIP | 100uF | 20% | 6.3V |
| C627 | 1-115-467-11 | CERAMIC CHIP | 0.22uF | 10% | 10V |
| C628 | 1-164-315-11 | CERAMIC CHIP | 470PF | 5% | 50V |
| C629 | 1-164-315-11 | CERAMIC CHIP | 470PF | 5% | 50V |
| C630 | 1-164-173-11 | CERAMIC CHIP | 0.0039uF | 10% | 50V |
| C631 | 1-127-956-21 | FILM CHIP | 0.1uF | 5% | 16V |
| C632 | 1-127-956-21 | FILM CHIP | 0.1uF | 5% | 16V |
| C633 | 1-164-733-11 | CERAMIC CHIP | 820PF | 10% | 50V |
| C634 | 1-115-467-11 | CERAMIC CHIP | 0.22uF | 10% | 10V |
| C635 | 1-126-206-11 | ELECT CHIP | 100uF | 20% | 6.3V |
| C636 | 1-115-467-11 | CERAMIC CHIP | 0.22uF | 10% | 10V |
| C637 | 1-162-964-11 | CERAMIC CHIP | 0.001uF | 10% | 50V |
| C638 | 1-115-467-11 | CERAMIC CHIP | 0.22uF | 10% | 10V |
| C639 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V |
| C640 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V |
| C701 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C702 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C703 | 1-162-962-11 | CERAMIC CHIP | 470PF | 10% | 50V |
| C705 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C706 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C707 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C708 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| C709 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C710 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C711 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C712 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C713 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C714 | 1-126-607-11 | ELECT CHIP | 47uF | 20% | 4V |
| C801 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C802 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C803 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C805 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C806 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C807 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C808 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C809 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C810 | 1-126-206-11 | ELECT CHIP | 100uF | 20% | 6.3V |
| C811 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C812 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C813 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C814 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C816 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V |
| C817 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V |
| C901 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C902 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C903 | 1-124-779-00 | ELECT CHIP | 10uF | 20% | 16V |
| C904 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C905 | 1-115-467-11 | CERAMIC CHIP | 0.22uF | 10% | 10V |
| C907 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C909 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C910 | 1-126-209-11 | ELECT CHIP | 100uF | 20% | 4V |
| C912 | 1-115-467-11 | CERAMIC CHIP | 0.22uF | 10% | 10V |
| C913 | 1-126-209-11 | ELECT CHIP | 100uF | 20% | 4V |
| C914 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C915 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C916 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C917 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C919 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C920 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C921 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C922 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C923 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C924 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C925 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C926 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C927 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C928 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C929 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C930 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C931 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C932 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C933 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C934 | 1-164-677-11 | CERAMIC CHIP | 0.033uF | 10% | 16V |
| C935 | 1-164-677-11 | CERAMIC CHIP | 0.033uF | 10% | 16V |
| C936 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| | | < CONNECTOR > | | | |
| * CN101 | 1-770-468-21 | PIN, CONNECTOR (PC BOARD) 10P | | | |
| CN102 | 1-766-382-21 | PIN, CONNECTOR (1.5MM) (SMD)10P | | | |
| CN103 | 1-778-274-11 | CONNECTOR, FFC/FPC 13P | | | |
| * CN104 | 1-770-470-21 | PIN, CONNECTOR (PC BOARD) 6P | | | |
| * CN201 | 1-764-177-11 | PIN, CONNECTOR (SMD) (1.5MM) 7P | | | |

# MB-107

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| CN203 | 1-815-507-21 | CONNECTOR, FFC/FPC 26P | |
| CN501 | 1-778-274-11 | CONNECTOR, FFC/FPC 13P | |
| CN502 | 1-816-296-21 | PIN, CONNECTOR (PC BOARD) 9P | |
| * CN503 | 1-770-470-21 | PIN, CONNECTOR (PC BOARD) 6P | |
| CN601 | 1-774-333-11 | CONNECTOR, FFC/FPC 21P (US, CND, KR) | |
| CN601 | 1-779-343-11 | CONNECTOR, FFC/FPC 23P (AEP, UK) | |
| | | < DIODE > | |
| D501 | 8-719-914-44 | DIODE DAP202K-T-146 | |
| D502 | 8-719-914-44 | DIODE DAP202K-T-146 | |
| D503 | 8-719-914-44 | DIODE DAP202K-T-146 | |
| | | < FERRITE BEAD > | |
| FB104 | 1-469-324-21 | FERRITE 0uH | |
| FB105 | 1-469-324-21 | FERRITE 0uH | |
| FB106 | 1-469-324-21 | FERRITE 0uH | |
| FB107 | 1-469-324-21 | FERRITE 0uH | |
| FB108 | 1-469-324-21 | FERRITE 0uH | |
| FB109 | 1-469-324-21 | FERRITE 0uH | |
| FB110 | 1-469-324-21 | FERRITE 0uH | |
| FB111 | 1-469-324-21 | FERRITE 0uH | |
| FB112 | 1-469-784-11 | FERRITE 0uH | |
| FB501 | 1-469-784-11 | FERRITE 0uH | |
| FB502 | 1-469-784-11 | FERRITE 0uH | |
| | | < FILTER > | |
| FL102 | 1-234-177-21 | FERRITE 0uH | |
| FL103 | 1-234-177-21 | FERRITE 0uH | |
| FL104 | 1-234-177-21 | FERRITE 0uH | |
| FL105 | 1-234-177-21 | FERRITE 0uH | |
| FL106 | 1-234-177-21 | FERRITE 0uH | |
| FL107 | 1-233-893-21 | FILTER, CHIP EMI | |
| FL108 | 1-234-177-21 | FERRITE 0uH | |
| FL109 | 1-234-177-21 | FERRITE 0uH | |
| FL201 | 1-234-177-21 | FERRITE 0uH | |
| FL402 | 1-234-177-21 | FERRITE 0uH | |
| FL403 | 1-234-177-21 | FERRITE 0uH | |
| FL404 | 1-234-177-21 | FERRITE 0uH | |
| FL501 | 1-234-177-21 | FERRITE 0uH | |
| FL502 | 1-234-177-21 | FERRITE 0uH | |
| FL503 | 1-234-177-21 | FERRITE 0uH | |
| FL701 | 1-234-177-21 | FERRITE 0uH | |
| FL901 | 1-234-177-21 | FERRITE 0uH | |
| FL902 | 1-234-177-21 | FERRITE 0uH | |
| FL903 | 1-234-177-21 | FERRITE 0uH | |
| FL905 | 1-234-177-21 | FERRITE 0uH | |
| | | < IC > | |
| IC101 | 8-759-640-40 | IC BR24C04F-WE2 | |
| IC102 | 6-702-302-01 | IC TK11133CSCL-G | |
| IC103 | 6-701-879-01 | IC CY24233ZCT | |
| IC104 | 6-701-837-01 | IC MB91307RPFV-G-BND-E1 | |
| IC107<br>(IC106) | | IC ROM | |
| IC108 | 6-701-874-01 | IC IDT71V016SA15PH8 (SCD2994) | |
| IC201 | 6-701-700-01 | IC SP3728ACB | |
| IC202 | 6-701-878-01 | IC FAN8034L | |
| IC301 | 6-701-876-01 | IC CXD9703R | |
| IC302 | 6-702-302-01 | IC TK11133CSCL-G | |
| IC303 | 8-759-643-10 | IC GM71V18160CT-6TR | |

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| IC401 | 6-702-300-01 | IC TK11118CSCL-G | |
| IC403 | 8-752-416-45 | IC CXD1935Q | |
| IC406 | 6-700-098-01 | IC HY57V641620HGT-P-TR-V | |
| IC501 | 8-752-418-21 | IC CXD1938AR | |
| IC502 | 6-700-534-01 | IC CXD9675R-L | |
| IC503 | 6-700-533-01 | IC CXD9674TN-E2 | |
| IC504 | 8-759-082-59 | IC TC7W32FU (TE12R) | |
| IC601 | 6-702-301-01 | IC TK11125CSCL-G | |
| IC602 | 6-701-814-01 | IC CXD9698R | |
| IC603 | 6-702-610-01 | IC MSM56V16160F-10T47M1 | |
| IC605 | 6-702-301-01 | IC TK11125CSCL-G | |
| IC701 | 6-702-287-01 | IC CXD9705R | |
| IC702 | 6-702-439-01 | IC K9F6408U0C-TCB0T | |
| IC801 | 6-702-288-01 | IC CXD9722TQ | |
| IC802 | 6-702-610-01 | IC MSM56V16160F-10T47M1 | |
| IC803 | 6-702-302-01 | IC TK11133CSCL-G | |
| IC901 | 6-702-299-01 | IC TK11225CMCL | |
| IC903 | 6-702-610-01 | IC MSM56V16160F-10T47M1 | |
| IC905 | 8-752-416-77 | IC CXD2753R | |
| IC906 | 6-702-231-01 | IC LMH6642MFX/NOPB | |
| | | < COIL > | |
| L101 | 1-414-410-21 | INDUCTOR 10uH | |
| L201 | 1-412-031-11 | INDUCTOR CHIP 47uH | |
| L202 | 1-412-031-11 | INDUCTOR CHIP 47uH | |
| | | < TRANSISTOR > | |
| Q201 | 8-729-903-46 | TRANSISTOR 2SB1132-T100-QR | |
| Q202 | 8-729-903-46 | TRANSISTOR 2SB1132-T100-QR | |
| | | < RESISTOR > | |
| R021 | 1-216-833-11 | METAL CHIP 10K 5% | 1/10W |
| R022 | 1-216-864-11 | SHORT CHIP 0 | |
| R101 | 1-216-864-11 | SHORT CHIP 0 | |
| R102 | 1-216-833-11 | METAL CHIP 10K 5% | 1/10W |
| R103 | 1-216-864-11 | SHORT CHIP 0 | |
| R105 | 1-216-864-11 | SHORT CHIP 0 | |
| R106 | 1-216-821-11 | METAL CHIP 1K 5% | 1/10W |
| R107 | 1-216-837-11 | METAL CHIP 22K 5% | 1/10W |
| R108 | 1-216-823-11 | METAL CHIP 1.5K 5% | 1/10W |
| R109 | 1-216-797-11 | METAL CHIP 10 5% | 1/10W |
| R110 | 1-216-805-11 | METAL CHIP 47 5% | 1/10W |
| R111 | 1-216-821-11 | METAL CHIP 1K 5% | 1/10W |
| R112 | 1-216-845-11 | METAL CHIP 100K 5% | 1/10W |
| R113 | 1-216-845-11 | METAL CHIP 100K 5% | 1/10W |
| R114 | 1-216-821-11 | METAL CHIP 1K 5% | 1/10W |
| R115 | 1-216-821-11 | METAL CHIP 1K 5% | 1/10W |
| R116 | 1-216-797-11 | METAL CHIP 10 5% | 1/10W |
| R117 | 1-216-833-11 | METAL CHIP 10K 5% | 1/10W |
| R118 | 1-216-833-11 | METAL CHIP 10K 5% | 1/10W |
| R119 | 1-216-797-11 | METAL CHIP 10 5% | 1/10W |
| R120 | 1-216-797-11 | METAL CHIP 10 5% | 1/10W |
| R121 | 1-216-797-11 | METAL CHIP 10 5% | 1/10W |
| R122 | 1-216-797-11 | METAL CHIP 10 5% | 1/10W |
| R123 | 1-216-827-11 | METAL CHIP 3.3K 5% | 1/10W |
| R124 | 1-216-827-11 | METAL CHIP 3.3K 5% | 1/10W |
| R125 | 1-216-833-11 | METAL CHIP 10K 5% | 1/10W |
| R126 | 1-216-833-11 | METAL CHIP 10K 5% | 1/10W |
| R129 | 1-216-797-11 | METAL CHIP 10 5% | 1/10W |
| R133 | 1-216-833-11 | METAL CHIP 10K 5% | 1/10W |

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| R138 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/10W |
| R139 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/10W |
| R140 | 1-216-864-11 | SHORT CHIP | 0 | | |
| R141 | 1-216-797-11 | METAL CHIP | 10 | 5% | 1/10W |
| R142 | 1-216-797-11 | METAL CHIP | 10 | 5% | 1/10W |
| R144 | 1-216-797-11 | METAL CHIP | 10 | 5% | 1/10W |
| R145 | 1-216-864-11 | SHORT CHIP | 0 | | |
| R146 | 1-216-797-11 | METAL CHIP | 10 | 5% | 1/10W |
| R147 | 1-216-797-11 | METAL CHIP | 10 | 5% | 1/10W |
| R148 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/10W |
| R150 | 1-216-827-11 | METAL CHIP | 3.3K | 5% | 1/10W |
| R151 | 1-216-805-11 | METAL CHIP | 47 | 5% | 1/10W |
| R152 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/10W |
| R153 | 1-216-827-11 | METAL CHIP | 3.3K | 5% | 1/10W |
| R154 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/10W |
| R156 | 1-216-827-11 | METAL CHIP | 3.3K | 5% | 1/10W |
| R157 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/10W |
| R159 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/10W |
| R160 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/10W |
| R163 | 1-216-864-11 | SHORT CHIP | 0 | | |
| R164 | 1-216-033-00 | RES-CHIP | 220 | 5% | 1/10W<br>(KR) |
| R164 | 1-216-075-00 | RES-CHIP | 12K | 5% | 1/10W<br>(AEP, UK) |
| R165 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/10W |
| R166 | 1-216-033-00 | RES-CHIP | 220 | 5% | 1/10W |
| R167 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/10W |
| R168 | 1-216-864-11 | SHORT CHIP | 0 | | |
| R169 | 1-216-081-00 | RES-CHIP | 22K | 5% | 1/10W<br>(KR) |
| R169 | 1-216-089-91 | RES-CHIP | 47K | 5% | 1/10W<br>(AEP, UK) |
| R170 | 1-216-864-11 | SHORT CHIP | 0 | | |
| R171 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/10W |
| R172 | 1-216-821-11 | METAL CHIP | 1K | 5% | 1/10W |
| R173 | 1-216-829-11 | METAL CHIP | 4.7K | 5% | 1/10W |
| R175 | 1-216-864-11 | SHORT CHIP | 0 | | |
| R176 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/10W |
| R177 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/10W |
| R178 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/10W |
| R179 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/10W |
| R180 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/10W |
| R181 | 1-216-801-11 | METAL CHIP | 22 | 5% | 1/10W |
| R182 | 1-216-801-11 | METAL CHIP | 22 | 5% | 1/10W |
| R183 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/10W |
| R184 | 1-216-864-11 | SHORT CHIP | 0 | | |
| R185 | 1-216-864-11 | SHORT CHIP | 0 | | |
| R187 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/10W |
| R188 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/10W |
| R189 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/10W |
| R190 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/10W |
| R192 | 1-216-864-11 | SHORT CHIP | 0 | | |
| R193 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/10W |
| R194 | 1-216-864-11 | SHORT CHIP | 0 | | |
| R195 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/10W |
| R196 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/10W |
| R197 | 1-216-797-11 | METAL CHIP | 10 | 5% | 1/10W |
| R198 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/10W |
| R199 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/10W |
| R206 | 1-216-829-11 | METAL CHIP | 4.7K | 5% | 1/10W |

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| R210 | 1-216-815-11 | METAL CHIP | 330 | 5% | 1/10W |
| R211 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/10W |
| R212 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/10W |
| R218 | 1-216-846-11 | METAL CHIP | 120K | 5% | 1/10W |
| R219 | 1-216-846-11 | METAL CHIP | 120K | 5% | 1/10W |
| R220 | 1-216-847-11 | METAL CHIP | 150K | 5% | 1/10W |
| R221 | 1-216-847-11 | METAL CHIP | 150K | 5% | 1/10W |
| R222 | 1-216-842-11 | METAL CHIP | 56K | 5% | 1/10W |
| R223 | 1-216-842-11 | METAL CHIP | 56K | 5% | 1/10W |
| R224 | 1-216-850-11 | METAL CHIP | 270K | 5% | 1/10W |
| R225 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/10W |
| R226 | 1-216-853-11 | METAL CHIP | 470K | 5% | 1/10W |
| R227 | 1-216-846-11 | METAL CHIP | 120K | 5% | 1/10W |
| R229 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/10W |
| R230 | 1-216-839-11 | METAL CHIP | 33K | 5% | 1/10W |
| R231 | 1-216-855-11 | METAL CHIP | 680K | 5% | 1/10W |
| R232 | 1-216-839-11 | METAL CHIP | 33K | 5% | 1/10W |
| R233 | 1-216-853-11 | METAL CHIP | 470K | 5% | 1/10W |
| R234 | 1-216-803-11 | METAL CHIP | 33 | 5% | 1/10W |
| R235 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/10W |
| R236 | 1-216-803-11 | METAL CHIP | 33 | 5% | 1/10W |
| R238 | 1-216-839-11 | METAL CHIP | 33K | 5% | 1/10W |
| R239 | 1-216-839-11 | METAL CHIP | 33K | 5% | 1/10W |
| R240 | 1-216-839-11 | METAL CHIP | 33K | 5% | 1/10W |
| R241 | 1-216-839-11 | METAL CHIP | 33K | 5% | 1/10W |
| R242 | 1-216-849-11 | METAL CHIP | 220K | 5% | 1/10W |
| R243 | 1-216-853-11 | METAL CHIP | 470K | 5% | 1/10W |
| R244 | 1-216-821-11 | METAL CHIP | 1K | 5% | 1/10W |
| R245 | 1-216-841-11 | METAL CHIP | 47K | 5% | 1/10W |
| R246 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/10W |
| R248 | 1-216-803-11 | METAL CHIP | 33 | 5% | 1/10W |
| R249 | 1-216-803-11 | METAL CHIP | 33 | 5% | 1/10W |
| R250 | 1-218-895-11 | METAL CHIP | 100K | 0.5% | 1/10W |
| R251 | 1-216-841-11 | METAL CHIP | 47K | 5% | 1/10W |
| R252 | 1-216-839-11 | METAL CHIP | 33K | 5% | 1/10W |
| R253 | 1-218-889-11 | METAL CHIP | 56K | 0.5% | 1/10W |
| R254 | 1-218-895-11 | METAL CHIP | 100K | 0.5% | 1/10W |
| R255 | 1-218-889-11 | METAL CHIP | 56K | 0.5% | 1/10W |
| R256 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/10W |
| R259 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/10W |
| R260 | 1-216-834-11 | METAL CHIP | 12K | 5% | 1/10W |
| R261 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/10W |
| R262 | 1-216-815-11 | METAL CHIP | 330 | 5% | 1/10W |
| R263 | 1-216-861-11 | METAL CHIP | 2.2M | 5% | 1/10W |
| R264 | 1-216-845-11 | METAL CHIP | 100K | 5% | 1/10W |
| R265 | 1-216-838-11 | METAL CHIP | 27K | 5% | 1/10W |
| R269 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/10W |
| R301 | 1-216-295-91 | SHORT CHIP | 0 | | |
| R302 | 1-216-295-91 | SHORT CHIP | 0 | | |
| R310 | 1-216-821-11 | METAL CHIP | 1K | 5% | 1/10W |
| R311 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/10W |
| R312 | 1-218-831-11 | METAL CHIP | 220 | 0.5% | 1/10W |
| R313 | 1-216-817-11 | METAL CHIP | 470 | 5% | 1/10W |
| R314 | 1-216-817-11 | METAL CHIP | 470 | 5% | 1/10W |
| R315 | 1-216-817-11 | METAL CHIP | 470 | 5% | 1/10W |
| R316 | 1-216-829-11 | METAL CHIP | 4.7K | 5% | 1/10W |
| R317 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/10W |
| R318 | 1-216-817-11 | METAL CHIP | 470 | 5% | 1/10W |
| R319 | 1-218-871-11 | METAL CHIP | 10K | 0.5% | 1/10W |
| R320 | 1-218-883-11 | METAL CHIP | 33K | 0.5% | 1/10W |

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| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| R321 | 1-218-879-11 | METAL CHIP | 22K | 0.5% | 1/10W |
| R322 | 1-218-847-11 | METAL CHIP | 1K | 0.5% | 1/10W |
| R323 | 1-218-855-11 | METAL CHIP | 2.2K | 0.5% | 1/10W |
| R324 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/10W |
| R325 | 1-218-867-11 | METAL CHIP | 6.8K | 5% | 1/10W |
| R326 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/10W |
| R327 | 1-218-871-11 | METAL CHIP | 10K | 0.5% | 1/10W |
| R328 | 1-216-838-11 | METAL CHIP | 27K | 5% | 1/10W |
| R329 | 1-216-825-11 | METAL CHIP | 2.2K | 5% | 1/10W |
| R330 | 1-216-825-11 | METAL CHIP | 2.2K | 5% | 1/10W |
| R331 | 1-216-825-11 | METAL CHIP | 2.2K | 5% | 1/10W |
| R332 | 1-216-825-11 | METAL CHIP | 2.2K | 5% | 1/10W |
| R333 | 1-216-847-11 | METAL CHIP | 150K | 5% | 1/10W |
| R334 | 1-218-853-11 | METAL CHIP | 1.8K | 0.5% | 1/10W |
| R335 | 1-216-829-11 | METAL CHIP | 4.7K | 5% | 1/10W |
| R337 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/10W |
| R338 | 1-216-801-11 | METAL CHIP | 22 | 5% | 1/10W |
| R349 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/10W |
| R351 | 1-216-295-91 | SHORT CHIP | 0 | | |
| R352 | 1-216-295-91 | SHORT CHIP | 0 | | |
| R358 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/10W |
| R359 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/10W |
| R360 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/10W |
| R364 | 1-216-864-11 | SHORT CHIP | 0 | | |
| R366 | 1-216-801-11 | METAL CHIP | 22 | 5% | 1/10W |
| R402 | 1-216-295-91 | SHORT CHIP | 0 | | |
| R407 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/10W |
| R414 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/10W |
| R416 | 1-218-867-11 | METAL CHIP | 6.8K | 5% | 1/10W |
| R418 | 1-216-822-11 | METAL CHIP | 1.2K | 5% | 1/10W |
| R419 | 1-216-797-11 | METAL CHIP | 10 | 5% | 1/10W |
| R426 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/10W |
| R430 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/10W |
| R432 | 1-216-864-11 | SHORT CHIP | 0 | | |
| R434 | 1-216-797-11 | METAL CHIP | 10 | 5% | 1/10W |
| R502 | 1-216-864-11 | SHORT CHIP | 0 | | |
| R503 | 1-216-864-11 | SHORT CHIP | 0 | | |
| R504 | 1-216-864-11 | SHORT CHIP | 0 | | |
| R505 | 1-216-864-11 | SHORT CHIP | 0 | | |
| R508 | 1-216-864-11 | SHORT CHIP | 0 | | |
| R511 | 1-216-864-11 | SHORT CHIP | 0 | | |
| R520 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/10W |
| R524 | 1-216-864-11 | SHORT CHIP | 0 | | |
| R525 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/10W |
| R527 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/10W |
| R528 | 1-216-864-11 | SHORT CHIP | 0 | | |
| R530 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/10W |
| R531 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/10W |
| R532 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/10W |
| R540 | 1-216-864-11 | SHORT CHIP | 0 | | |
| R541 | 1-216-864-11 | SHORT CHIP | 0 | | |
| R546 | 1-216-864-11 | SHORT CHIP | 0 | | |
| R547 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/10W |
| R566 | 1-216-864-11 | SHORT CHIP | 0 | | |
| R569 | 1-216-864-11 | SHORT CHIP | 0 | | |
| R573 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/10W |
| R590 | 1-216-797-11 | METAL CHIP | 10 | 5% | 1/10W |
| R601 | 1-216-864-11 | SHORT CHIP | 0 | | |
| R603 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/10W |
| R604 | 1-216-864-11 | SHORT CHIP | 0 | | |
| R605 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/10W |
| R612 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/10W |
| R613 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/10W |
| R614 | 1-216-864-11 | SHORT CHIP | 0 | | |
| R615 | 1-218-285-11 | METAL CHIP | 75 | 5% | 1/10W |
| R617 | 1-218-292-11 | METAL CHIP | 20K | 5% | 1/10W |
| R618 | 1-216-864-11 | SHORT CHIP | 0 | | |
| R619 | 1-216-801-11 | METAL CHIP | 22 | 5% | 1/10W |
| R620 | 1-216-801-11 | METAL CHIP | 22 | 5% | 1/10W |
| R621 | 1-216-801-11 | METAL CHIP | 22 | 5% | 1/10W |
| R622 | 1-216-801-11 | METAL CHIP | 22 | 5% | 1/10W |
| R623 | 1-216-801-11 | METAL CHIP | 22 | 5% | 1/10W |
| R624 | 1-216-801-11 | METAL CHIP | 22 | 5% | 1/10W |
| R625 | 1-216-801-11 | METAL CHIP | 22 | 5% | 1/10W |
| R626 | 1-216-801-11 | METAL CHIP | 22 | 5% | 1/10W |
| R627 | 1-216-801-11 | METAL CHIP | 22 | 5% | 1/10W |
| R628 | 1-216-801-11 | METAL CHIP | 22 | 5% | 1/10W |
| R629 | 1-216-801-11 | METAL CHIP | 22 | 5% | 1/10W |
| R630 | 1-216-801-11 | METAL CHIP | 22 | 5% | 1/10W |
| R631 | 1-216-801-11 | METAL CHIP | 22 | 5% | 1/10W |
| R632 | 1-216-801-11 | METAL CHIP | 22 | 5% | 1/10W |
| R633 | 1-216-801-11 | METAL CHIP | 22 | 5% | 1/10W |
| R634 | 1-216-801-11 | METAL CHIP | 22 | 5% | 1/10W |
| R639 | 1-216-864-11 | SHORT CHIP | 0 | | |
| R640 | 1-216-789-11 | METAL CHIP | 2.2 | 5% | 1/10W |
| R659 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/10W |
| R661 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/10W |
| R663 | 1-216-864-11 | SHORT CHIP | 0 | | |
| R664 | 1-216-864-11 | SHORT CHIP | 0 | | |
| R665 | 1-216-864-11 | SHORT CHIP | 0 | | |
| R674 | 1-216-819-11 | METAL CHIP | 680 | 5% | 1/10W |
| R675 | 1-216-821-11 | METAL CHIP | 1K | 5% | 1/10W |
| R676 | 1-216-821-11 | METAL CHIP | 1K | 5% | 1/10W |
| R677 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/10W |
| R678 | 1-218-834-11 | METAL CHIP | 300 | 0.5% | 1/10W |
| R679 | 1-218-834-11 | METAL CHIP | 300 | 0.5% | 1/10W |
| R680 | 1-218-830-11 | METAL CHIP | 200 | 0.5% | 1/10W<br>(US, CND, KR) |
| R680 | 1-218-827-11 | METAL CHIP | 150 | 0.5% | 1/10W<br>(AEP, UK) |
| R681 | 1-218-834-11 | METAL CHIP | 300 | 0.5% | 1/10W |
| R682 | 1-218-834-11 | METAL CHIP | 300 | 0.5% | 1/10W |
| R683 | 1-218-834-11 | METAL CHIP | 300 | 0.5% | 1/10W |
| R686 | 1-216-864-11 | SHORT CHIP | 0 (US, CND, KR) | | |
| R687 | 1-216-864-11 | SHORT CHIP | 0 (AEP, UK) | | |
| R688 | 1-216-864-11 | SHORT CHIP | 0 (US, CND, KR) | | |
| R689 | 1-216-864-11 | SHORT CHIP | 0 (AEP, UK) | | |
| R697 | 1-216-864-11 | SHORT CHIP | 0 | | |
| R698 | 1-216-864-11 | SHORT CHIP | 0 | | |
| R703 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/10W |
| R704 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/10W |
| R705 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/10W |
| R706 | 1-216-864-11 | SHORT CHIP | 0 | | |
| R712 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/10W |
| R713 | 1-216-295-91 | SHORT CHIP | 0 | | |
| R714 | 1-216-844-11 | METAL CHIP | 82K | 5% | 1/10W |
| R715 | 1-216-821-11 | METAL CHIP | 1K | 5% | 1/10W |
| R716 | 1-216-838-11 | METAL CHIP | 27K | 5% | 1/10W |
| R717 | 1-216-838-11 | METAL CHIP | 27K | 5% | 1/10W |
| R718 | 1-216-844-11 | METAL CHIP | 82K | 5% | 1/10W |
| R719 | 1-216-844-11 | METAL CHIP | 82K | 5% | 1/10W |

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| R720 | 1-216-844-11 | METAL CHIP | 82K | 5% | 1/10W |
| R722 | 1-216-841-11 | METAL CHIP | 47K | 5% | 1/10W |
| R723 | 1-216-864-11 | SHORT CHIP | 0 | | |
| R726 | 1-216-864-11 | SHORT CHIP | 0 | | |
| R727 | 1-216-864-11 | SHORT CHIP | 0 | | |
| R730 | 1-216-821-11 | METAL CHIP | 1K | 5% | 1/10W |
| R731 | 1-216-821-11 | METAL CHIP | 1K | 5% | 1/10W |
| R732 | 1-216-821-11 | METAL CHIP | 1K | 5% | 1/10W |
| R734 | 1-216-821-11 | METAL CHIP | 1K | 5% | 1/10W |
| R735 | 1-216-821-11 | METAL CHIP | 1K | 5% | 1/10W |
| R738 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/10W |
| R814 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/10W |
| R817 | 1-216-864-11 | SHORT CHIP | 0 | | |
| R902 | 1-216-864-11 | SHORT CHIP | 0 | | |
| R903 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/10W |
| R904 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/10W |
| R905 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/10W |
| R907 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/10W |
| R908 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/10W |
| R909 | 1-216-834-11 | METAL CHIP | 12K | 5% | 1/10W |
| R910 | 1-218-867-11 | METAL CHIP | 6.8K | 5% | 1/10W |
| R911 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/10W |
| R912 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/10W |
| R913 | 1-216-803-11 | METAL CHIP | 33 | 5% | 1/10W |
| R914 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/10W |
| R915 | 1-216-821-11 | METAL CHIP | 1K | 5% | 1/10W |
| R916 | 1-216-827-11 | METAL CHIP | 3.3K | 5% | 1/10W |
| R917 | 1-216-864-11 | SHORT CHIP | 0 | | |
| R918 | 1-216-864-11 | SHORT CHIP | 0 | | |
| R921 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/10W |
| R922 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/10W |
| R924 | 1-216-864-11 | SHORT CHIP | 0 | | |
| R925 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/10W |
| R931 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/10W |
| R949 | 1-216-864-11 | SHORT CHIP | 0 | | |
| R950 | 1-216-864-11 | SHORT CHIP | 0 | | |
| R954 | 1-216-864-11 | SHORT CHIP | 0 | | |
| R955 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/10W |
| R956 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/10W |
| R957 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/10W |
| R958 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/10W |
| R959 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/10W |
| R960 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/10W |
| R961 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/10W |
| R962 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/10W |
| R963 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/10W |
| R964 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/10W |
| | | < COMPOSITION CIRCUIT BLOCK > | | | |
| * RB102 | 1-233-270-11 | NETWORK, RES (8 GANG) 10K | | | |
| RB103 | 1-233-576-11 | RES, CHIP NETWORK 100 | | | |
| RB104 | 1-233-576-11 | RES, CHIP NETWORK 100 | | | |
| RB105 | 1-233-576-11 | RES, CHIP NETWORK 100 | | | |
| RB106 | 1-233-576-11 | RES, CHIP NETWORK 100 | | | |
| RB107 | 1-233-576-11 | RES, CHIP NETWORK 100 | | | |
| RB108 | 1-233-576-11 | RES, CHIP NETWORK 100 | | | |
| RB109 | 1-233-576-11 | RES, CHIP NETWORK 100 | | | |
| RB110 | 1-233-576-11 | RES, CHIP NETWORK 100 | | | |
| RB111 | 1-233-576-11 | RES, CHIP NETWORK 100 | | | |
| | | < VARIABLE RESISTOR > | | | |
| RV601 | 1-223-583-11 | RES, ADJ, CARBON 1K<br>(COMPOSITE VIDEO LEVEL) | | | |
| RV602 | 1-223-583-11 | RES, ADJ, CARBON 1K<br>(COMPONENT VIDEO LEVEL) | | | |
| | | < VIBRATOR > | | | |
| X101 | 1-795-174-11 | VIBRATOR, CERAMIC (16.5MHz) | | | |
| X102 | 1-795-540-21 | VIBRATOR, CRYSTAL (27MHz) | | | |

A-6061-086-A MS-113 BOARD, COMPLETE
***********************
(Ref. No. 4, 000 Series)

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| | | < CONNECTOR > | | | |
| CN101 | 1-573-383-11 | PIN, CONNECTOR (PC BOARD) 2P | | | |
| CN102 | 1-784-612-11 | CONNECTOR, FFC/FPC (ZIF) 7P | | | |
| | | < JUMPER RESISTOR > | | | |
| JR101 | 1-216-296-11 | SHORT CHIP | 0 | | |
| JR102 | 1-216-296-11 | SHORT CHIP | 0 | | |
| JR103 | 1-216-295-91 | SHORT CHIP | 0 | | |
| | | < PHOTO INTERRUPTER > | | | |
| PH101 | 8-749-014-69 | IC SPI-238-18 | | | |
| PH102 | 8-749-017-89 | IC SPI-237 | | | |
| | | < TRANSISTOR > | | | |
| Q101 | 8-729-230-49 | TRANSISTOR | 2SC2712-YG-TE85L | | |
| Q102 | 8-729-230-49 | TRANSISTOR | 2SC2712-YG-TE85L | | |
| | | < RESISTOR > | | | |
| R101 | 1-216-041-00 | RES-CHIP | 470 | 5% | 1/10W |
| R102 | 1-216-041-00 | RES-CHIP | 470 | 5% | 1/10W |
| R103 | 1-216-041-00 | RES-CHIP | 470 | 5% | 1/10W |
| R104 | 1-216-095-00 | RES-CHIP | 82K | 5% | 1/10W |
| R105 | 1-216-095-00 | RES-CHIP | 82K | 5% | 1/10W |
| R109 | 1-216-041-00 | RES-CHIP | 470 | 5% | 1/10W |

SW-381 BOARD
*************
(Ref. No. 2, 000 Series)

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| | | < CAPACITOR > | | | |
| C401 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C402 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| | | < CONNECTOR > | | | |
| CN401 | 1-506-484-11 | PIN, CONNECTOR 5P | | | |
| | | < SWITCH > | | | |
| S401 | 1-467-818-31 | ENCODER, ROTARY (⏮/⏭ PUSH ENTER) | | | |

# VP-58

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| | A-6061-094-A | VP-58 (UC2) BOARD, COMPLETE<br>(US, CND, KR)<br>****************************<br>(Ref. No. 5, 000 Series) | | | |
| | 7-685-871-01 | SCREW +BVTT 3X6 (S) | | | |
| | | < CAPACITOR > | | | |
| C101 | 1-165-732-31 | ELECT | 47uF | 20% | 25V |
| C102 | 1-164-004-11 | CERAMIC CHIP | 0.1uF | 10% | 25V |
| C103 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C104 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C105 | 1-165-722-31 | ELECT | 100uF | 20% | 10V |
| C106 | 1-164-004-11 | CERAMIC CHIP | 0.1uF | 10% | 25V |
| C107 | 1-163-009-91 | CERAMIC CHIP | 0.001uF | 10% | 50V |
| C108 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C109 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C110 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C111 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C112 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C113 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C114 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C115 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C116 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C117 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C118 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C119 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C120 | 1-165-722-31 | ELECT | 100uF | 20% | 10V |
| C121 | 1-164-004-11 | CERAMIC CHIP | 0.1uF | 10% | 25V |
| C122 | 1-126-205-11 | ELECT CHIP | 47uF | 20% | 6.3V |
| C123 | 1-126-205-11 | ELECT CHIP | 47uF | 20% | 6.3V |
| C124 | 1-126-395-11 | ELECT CHIP | 22uF | 20% | 16V |
| C125 | 1-126-395-11 | ELECT CHIP | 22uF | 20% | 16V |
| C126 | 1-127-956-21 | FILM CHIP | 0.1uF | 5% | 16V |
| C127 | 1-164-004-11 | CERAMIC CHIP | 0.1uF | 10% | 25V |
| C128 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C129 | 1-164-004-11 | CERAMIC CHIP | 0.1uF | 10% | 25V |
| C130 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C131 | 1-164-004-11 | CERAMIC CHIP | 0.1uF | 10% | 25V |
| C132 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C133 | 1-126-205-11 | ELECT CHIP | 47uF | 20% | 6.3V |
| C134 | 1-126-205-11 | ELECT CHIP | 47uF | 20% | 6.3V |
| C135 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C136 | 1-126-205-11 | ELECT CHIP | 47uF | 20% | 6.3V |
| C137 | 1-126-205-11 | ELECT CHIP | 47uF | 20% | 6.3V |
| C138 | 1-127-956-21 | FILM CHIP | 0.1uF | 5% | 16V |
| C139 | 1-126-205-11 | ELECT CHIP | 47uF | 20% | 6.3V |
| C140 | 1-127-956-21 | FILM CHIP | 0.1uF | 5% | 16V |
| C141 | 1-126-205-11 | ELECT CHIP | 47uF | 20% | 6.3V |
| C142 | 1-127-956-21 | FILM CHIP | 0.1uF | 5% | 16V |
| C143 | 1-126-205-11 | ELECT CHIP | 47uF | 20% | 6.3V |
| C144 | 1-126-205-11 | ELECT CHIP | 47uF | 20% | 6.3V |
| C145 | 1-126-205-11 | ELECT CHIP | 47uF | 20% | 6.3V |
| C146 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C147 | 1-164-004-11 | CERAMIC CHIP | 0.1uF | 10% | 25V |
| C148 | 1-127-956-21 | FILM CHIP | 0.1uF | 5% | 16V |
| C149 | 1-163-085-00 | CERAMIC CHIP | 2PF | | 50V |
| C150 | 1-163-085-00 | CERAMIC CHIP | 2PF | | 50V |
| C151 | 1-163-085-00 | CERAMIC CHIP | 2PF | | 50V |
| C152 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C153 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| C154 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C155 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C156 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C157 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C164 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C165 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C166 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C167 | 1-163-021-91 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C168 | 1-163-085-00 | CERAMIC CHIP | 2PF | | 50V |
| C169 | 1-163-085-00 | CERAMIC CHIP | 2PF | | 50V |
| C170 | 1-163-085-00 | CERAMIC CHIP | 2PF | | 50V |
| C171 | 1-163-085-00 | CERAMIC CHIP | 2PF | | 50V |
| C172 | 1-163-085-00 | CERAMIC CHIP | 2PF | | 50V |
| C173 | 1-163-085-00 | CERAMIC CHIP | 2PF | | 50V |
| | | < CONNECTOR > | | | |
| CN101 | 1-774-333-11 | CONNECTOR, FFC/FPC 21P | | | |
| CN102 | 1-770-215-11 | PIN, CONNECTOR (PC BOARD) 7P | | | |
| | | < DIODE > | | | |
| D101 | 8-719-025-29 | DIODE 02CZ5.1-TE85L | | | |
| D105 | 8-719-988-61 | DIODE 1SS355TE-17 | | | |
| D106 | 8-719-988-61 | DIODE 1SS355TE-17 | | | |
| D107 | 8-719-071-15 | DIODE HZM6.8ZWA1TL | | | |
| D108 | 8-719-071-15 | DIODE HZM6.8ZWA1TL | | | |
| D109 | 8-719-071-15 | DIODE HZM6.8ZWA1TL | | | |
| D113 | 8-719-071-15 | DIODE HZM6.8ZWA1TL | | | |
| | | < FILTER > | | | |
| FL101 | 1-233-893-21 | FILTER, CHIP EMI | | | |
| FL102 | 1-233-893-21 | FILTER, CHIP EMI | | | |
| FL103 | 1-233-893-21 | FILTER, CHIP EMI | | | |
| FL104 | 1-795-708-21 | FILTER, LOW PASS (6.75MHz) | | | |
| FL105 | 1-795-708-21 | FILTER, LOW PASS (6.75MHz) | | | |
| FL106 | 1-795-708-21 | FILTER, LOW PASS (6.75MHz) | | | |
| FL107 | 1-795-708-21 | FILTER, LOW PASS (6.75MHz) | | | |
| FL108 | 1-795-708-21 | FILTER, LOW PASS (6.75MHz) | | | |
| FL109 | 1-795-708-21 | FILTER, LOW PASS (6.75MHz) | | | |
| FL110 | 1-795-280-11 | FILTER, LOW PASS (13.5MHz) | | | |
| FL111 | 1-795-280-11 | FILTER, LOW PASS (13.5MHz) | | | |
| FL112 | 1-795-280-11 | FILTER, LOW PASS (13.5MHz) | | | |
| FL113 | 1-233-893-21 | FILTER, CHIP EMI | | | |
| | | < IC > | | | |
| IC101 | 8-759-711-85 | IC NJM4580E-D-TE2 | | | |
| IC103 | 8-759-684-23 | IC AD8058ARM-REEL | | | |
| IC104 | 8-759-684-23 | IC AD8058ARM-REEL | | | |
| IC105 | 8-759-684-23 | IC AD8058ARM-REEL | | | |
| IC109 | 8-759-684-23 | IC AD8058ARM-REEL | | | |
| IC110 | 8-759-684-23 | IC AD8058ARM-REEL | | | |
| IC111 | 8-759-684-23 | IC AD8058ARM-REEL | | | |
| | | < JACK > | | | |
| J101 | 1-793-475-11 | JACK, PIN 2P (VIDEO OUT) | | | |
| J102 | 1-694-484-11 | TERMINAL, S (2P.V) (S VIDEO OUT) | | | |
| J103 | 1-794-731-11 | JACK, PIN 1P (COMPONENT VIDEO Y) | | | |
| J104 | 1-794-732-11 | JACK, PIN 1P (COMPONENT VIDEO $P_B/C_B$) | | | |
| J105 | 1-794-733-11 | JACK, PIN 1P (COMPONENT VIDEO $P_R/C_R$) | | | |

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| | | < COIL > | | | |
| L101 | 1-419-387-21 | INDUCTOR | 100uH | | |
| L102 | 1-419-387-21 | INDUCTOR | 100uH | | |
| L103 | 1-419-387-21 | INDUCTOR | 100uH | | |
| L104 | 1-419-387-21 | INDUCTOR | 100uH | | |
| L105 | 1-419-387-21 | INDUCTOR | 100uH | | |
| L106 | 1-419-387-21 | INDUCTOR | 100uH | | |
| L107 | 1-419-387-21 | INDUCTOR | 100uH | | |
| L108 | 1-419-387-21 | INDUCTOR | 100uH | | |
| | | < TRANSISTOR > | | | |
| Q101 | 8-729-424-08 | TRANSISTOR | UN2111-TX | | |
| Q102 | 8-729-421-19 | TRANSISTOR | UN2213-TX | | |
| Q103 | 8-729-230-49 | TRANSISTOR | 2SC2712-YG-TE85L | | |
| Q104 | 8-729-230-49 | TRANSISTOR | 2SC2712-YG-TE85L | | |
| Q105 | 8-729-230-49 | TRANSISTOR | 2SC2712-YG-TE85L | | |
| Q106 | 8-729-230-49 | TRANSISTOR | 2SC2712-YG-TE85L | | |
| Q107 | 8-729-230-49 | TRANSISTOR | 2SC2712-YG-TE85L | | |
| Q108 | 8-729-230-49 | TRANSISTOR | 2SC2712-YG-TE85L | | |
| Q109 | 8-729-421-19 | TRANSISTOR | UN2213-TX | | |
| Q110 | 8-729-421-19 | TRANSISTOR | UN2213-TX | | |
| Q111 | 8-729-224-62 | TRANSISTOR | 2SK246GR-TPE2 | | |
| Q112 | 8-729-052-95 | TRANSISTOR | 2SC5171 | | |
| Q113 | 8-729-052-94 | TRANSISTOR | 2SA1930 | | |
| Q114 | 8-729-216-22 | TRANSISTOR | 2SA1162-YG-TE85L | | |
| Q115 | 8-729-216-22 | TRANSISTOR | 2SA1162-YG-TE85L | | |
| Q116 | 8-729-216-22 | TRANSISTOR | 2SA1162-YG-TE85L | | |
| Q117 | 8-729-216-22 | TRANSISTOR | 2SA1162-YG-TE85L | | |
| Q118 | 8-729-216-22 | TRANSISTOR | 2SA1162-YG-TE85L | | |
| Q119 | 8-729-216-22 | TRANSISTOR | 2SA1162-YG-TE85L | | |
| Q123 | 8-729-230-49 | TRANSISTOR | 2SC2712-YG-TE85L | | |
| Q124 | 8-729-230-49 | TRANSISTOR | 2SC2712-YG-TE85L | | |
| Q125 | 8-729-230-49 | TRANSISTOR | 2SC2712-YG-TE85L | | |
| Q126 | 8-729-216-22 | TRANSISTOR | 2SA1162-YG-TE85L | | |
| Q127 | 8-729-216-22 | TRANSISTOR | 2SA1162-YG-TE85L | | |
| Q128 | 8-729-216-22 | TRANSISTOR | 2SA1162-YG-TE85L | | |
| Q129 | 8-729-421-19 | TRANSISTOR | UN2213-TX | | |
| Q130 | 8-729-421-19 | TRANSISTOR | UN2213-TX | | |
| Q132 | 8-729-424-08 | TRANSISTOR | UN2111-TX | | |
| Q134 | 8-729-424-08 | TRANSISTOR | UN2111-TX | | |
| Q135 | 8-729-424-08 | TRANSISTOR | UN2111-TX | | |
| Q136 | 8-729-422-27 | TRANSISTOR | 2SD601A-QRS-TX | | |
| Q137 | 8-729-424-08 | TRANSISTOR | UN2111-TX | | |
| Q138 | 8-729-141-73 | TRANSISTOR | 2SD1938 (F)-S (TX).SO | | |
| Q139 | 8-729-141-73 | TRANSISTOR | 2SD1938 (F)-S (TX).SO | | |
| Q140 | 8-729-141-73 | TRANSISTOR | 2SD1938 (F)-S (TX).SO | | |
| Q141 | 8-729-424-08 | TRANSISTOR | UN2111-TX | | |
| Q142 | 8-729-046-97 | TRANSISTOR | 2SD1938 (F)-T (TX).SO | | |
| Q143 | 8-729-046-97 | TRANSISTOR | 2SD1938 (F)-T (TX).SO | | |
| Q144 | 8-729-046-97 | TRANSISTOR | 2SD1938 (F)-T (TX).SO | | |
| | | < RESISTOR > | | | |
| R101 | 1-216-295-91 | SHORT CHIP | 0 | | |
| R102 | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| R103 | 1-216-009-91 | RES-CHIP | 22 | 5% | 1/10W |
| R104 | 1-216-009-91 | RES-CHIP | 22 | 5% | 1/10W |
| R105 | 1-216-009-91 | RES-CHIP | 22 | 5% | 1/10W |
| R106 | 1-216-009-91 | RES-CHIP | 22 | 5% | 1/10W |
| R107 | 1-216-009-91 | RES-CHIP | 22 | 5% | 1/10W |
| R108 | 1-216-009-91 | RES-CHIP | 22 | 5% | 1/10W |

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| R109 | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| R110 | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| R111 | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| R112 | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| R113 | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| R114 | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| R115 | 1-216-081-00 | RES-CHIP | 22K | 5% | 1/10W |
| R116 | 1-211-966-11 | METAL CHIP | 39 | 0.5% | 1/10W |
| R117 | 1-211-966-11 | METAL CHIP | 39 | 0.5% | 1/10W |
| R118 | 1-211-966-11 | METAL CHIP | 39 | 0.5% | 1/10W |
| R119 | 1-211-966-11 | METAL CHIP | 39 | 0.5% | 1/10W |
| R120 | 1-211-966-11 | METAL CHIP | 39 | 0.5% | 1/10W |
| R121 | 1-211-966-11 | METAL CHIP | 39 | 0.5% | 1/10W |
| R122 | 1-216-633-11 | METAL CHIP | 180 | 0.5% | 1/10W |
| R123 | 1-216-633-11 | METAL CHIP | 180 | 0.5% | 1/10W |
| R124 | 1-216-633-11 | METAL CHIP | 180 | 0.5% | 1/10W |
| R125 | 1-216-633-11 | METAL CHIP | 180 | 0.5% | 1/10W |
| R126 | 1-216-633-11 | METAL CHIP | 180 | 0.5% | 1/10W |
| R127 | 1-216-633-11 | METAL CHIP | 180 | 0.5% | 1/10W |
| R128 | 1-216-025-11 | RES-CHIP | 100 | 5% | 1/10W |
| R129 | 1-216-025-11 | RES-CHIP | 100 | 5% | 1/10W |
| R130 | 1-216-025-11 | RES-CHIP | 100 | 5% | 1/10W |
| R131 | 1-216-025-11 | RES-CHIP | 100 | 5% | 1/10W |
| R132 | 1-208-790-11 | METAL CHIP | 2.2K | 0.5% | 1/10W |
| R133 | 1-208-790-11 | METAL CHIP | 2.2K | 0.5% | 1/10W |
| R134 | 1-208-790-11 | METAL CHIP | 2.2K | 0.5% | 1/10W |
| R135 | 1-208-790-11 | METAL CHIP | 2.2K | 0.5% | 1/10W |
| R136 | 1-208-790-11 | METAL CHIP | 2.2K | 0.5% | 1/10W |
| R137 | 1-208-790-11 | METAL CHIP | 2.2K | 0.5% | 1/10W |
| R138 | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| R139 | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| R140 | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| R141 | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| R142 | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| R143 | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| R144 | 1-216-061-91 | RES-CHIP | 3.3K | 5% | 1/10W |
| R145 | 1-216-061-91 | RES-CHIP | 3.3K | 5% | 1/10W |
| R152 | 1-216-009-91 | RES-CHIP | 22 | 5% | 1/10W |
| R153 | 1-216-009-91 | RES-CHIP | 22 | 5% | 1/10W |
| R154 | 1-216-009-91 | RES-CHIP | 22 | 5% | 1/10W |
| R155 | 1-216-045-00 | RES-CHIP | 680 | 5% | 1/10W |
| R156 | 1-216-045-00 | RES-CHIP | 680 | 5% | 1/10W |
| R157 | 1-216-045-00 | RES-CHIP | 680 | 5% | 1/10W |
| R158 | 1-211-961-91 | METAL CHIP | 24 | 0.5% | 1/10W |
| R159 | 1-211-961-91 | METAL CHIP | 24 | 0.5% | 1/10W |
| R160 | 1-211-961-91 | METAL CHIP | 24 | 0.5% | 1/10W |
| R161 | 1-208-760-11 | METAL CHIP | 120 | 0.5% | 1/10W |
| R162 | 1-208-760-11 | METAL CHIP | 120 | 0.5% | 1/10W |
| R163 | 1-208-760-11 | METAL CHIP | 120 | 0.5% | 1/10W |
| R164 | 1-208-790-11 | METAL CHIP | 2.2K | 0.5% | 1/10W |
| R165 | 1-208-790-11 | METAL CHIP | 2.2K | 0.5% | 1/10W |
| R166 | 1-208-790-11 | METAL CHIP | 2.2K | 0.5% | 1/10W |
| R167 | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| R168 | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| R169 | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| R172 | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| R175 | 1-216-073-91 | RES-CHIP | 10K | 5% | 1/10W |
| R176 | 1-216-065-91 | RES-CHIP | 4.7K | 5% | 1/10W |
| R178 | 1-216-073-91 | RES-CHIP | 10K | 5% | 1/10W |
| R179 | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |

# POWER BLOCK (ZSSR107G)

# POWER BLOCK (ZSSR107H)

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| R180 | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| R181 | 1-216-089-91 | RES-CHIP | 47K | 5% | 1/10W |
| R182 | 1-216-073-91 | RES-CHIP | 10K | 5% | 1/10W |
| R183 | 1-216-073-91 | RES-CHIP | 10K | 5% | 1/10W |
| R184 | 1-216-073-91 | RES-CHIP | 10K | 5% | 1/10W |
| R185 | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| R186 | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| R187 | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| R188 | 1-216-001-00 | RES-CHIP | 10 | 5% | 1/10W |
| R189 | 1-216-001-00 | RES-CHIP | 10 | 5% | 1/10W |
| R190 | 1-216-001-00 | RES-CHIP | 10 | 5% | 1/10W |
| R191 | 1-216-001-00 | RES-CHIP | 10 | 5% | 1/10W |
| R192 | 1-216-001-00 | RES-CHIP | 10 | 5% | 1/10W |
| R193 | 1-216-001-00 | RES-CHIP | 10 | 5% | 1/10W |
| R194 | 1-216-001-00 | RES-CHIP | 10 | 5% | 1/10W |
| R195 | 1-216-001-00 | RES-CHIP | 10 | 5% | 1/10W |
| R196 | 1-216-001-00 | RES-CHIP | 10 | 5% | 1/10W |
| R198 | 1-216-089-91 | RES-CHIP | 47K | 5% | 1/10W |
| R199 | 1-208-790-11 | METAL CHIP | 2.2K | 0.5% | 1/10W |
| R200 | 1-208-790-11 | METAL CHIP | 2.2K | 0.5% | 1/10W |
| R201 | 1-208-790-11 | METAL CHIP | 2.2K | 0.5% | 1/10W |
| R202 | 1-216-073-91 | RES-CHIP | 10K | 5% | 1/10W |
| R203 | 1-216-073-91 | RES-CHIP | 10K | 5% | 1/10W |
| R204 | 1-216-073-91 | RES-CHIP | 10K | 5% | 1/10W |
| R205 | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| R206 | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| R207 | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| R208 | 1-216-001-00 | RES-CHIP | 10 | 5% | 1/10W |
| R209 | 1-216-001-00 | RES-CHIP | 10 | 5% | 1/10W |
| R210 | 1-216-001-00 | RES-CHIP | 10 | 5% | 1/10W |
| R211 | 1-208-790-11 | METAL CHIP | 2.2K | 0.5% | 1/10W |
| R212 | 1-208-790-11 | METAL CHIP | 2.2K | 0.5% | 1/10W |
| R213 | 1-208-790-11 | METAL CHIP | 2.2K | 0.5% | 1/10W |
| R214 | 1-208-790-11 | METAL CHIP | 2.2K | 0.5% | 1/10W |
| R215 | 1-208-797-11 | METAL CHIP | 4.3K | 0.5% | 1/10W |
| R216 | 1-208-790-11 | METAL CHIP | 2.2K | 0.5% | 1/10W |
| R217 | 1-208-790-11 | METAL CHIP | 2.2K | 0.5% | 1/10W |
| R218 | 1-208-790-11 | METAL CHIP | 2.2K | 0.5% | 1/10W |
| R219 | 1-208-797-11 | METAL CHIP | 4.3K | 0.5% | 1/10W |
| R220 | 1-216-001-00 | RES-CHIP | 10 | 5% | 1/10W |
| R221 | 1-216-001-00 | RES-CHIP | 10 | 5% | 1/10W |
| R222 | 1-216-001-00 | RES-CHIP | 10 | 5% | 1/10W |
| R223 | 1-208-790-11 | METAL CHIP | 2.2K | 0.5% | 1/10W |
| R224 | 1-208-790-11 | METAL CHIP | 2.2K | 0.5% | 1/10W |
| R225 | 1-208-790-11 | METAL CHIP | 2.2K | 0.5% | 1/10W |
| R226 | 1-208-790-11 | METAL CHIP | 2.2K | 0.5% | 1/10W |
| R227 | 1-208-790-11 | METAL CHIP | 2.2K | 0.5% | 1/10W |
| R228 | 1-208-790-11 | METAL CHIP | 2.2K | 0.5% | 1/10W |
| R229 | 1-216-295-91 | SHORT CHIP | 0 | | |
| R230 | 1-216-295-91 | SHORT CHIP | 0 | | |
| R231 | 1-216-295-91 | SHORT CHIP | 0 | | |
| R240 | 1-216-073-91 | RES-CHIP | 10K | 5% | 1/10W |
| R241 | 1-216-073-91 | RES-CHIP | 10K | 5% | 1/10W |
| R257 | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| R258 | 1-216-295-91 | SHORT CHIP | 0 | | |
| R259 | 1-216-295-91 | SHORT CHIP | 0 | | |
| R260 | 1-216-295-91 | SHORT CHIP | 0 | | |
| R261 | 1-216-295-91 | SHORT CHIP | 0 | | |
| R262 | 1-216-295-91 | SHORT CHIP | 0 | | |
| R263 | 1-216-295-91 | SHORT CHIP | 0 | | |
| R264 | 1-216-295-91 | SHORT CHIP | 0 | | |
| R265 | 1-216-295-91 | SHORT CHIP | 0 | | |
| R266 | 1-216-295-91 | SHORT CHIP | 0 | | |
| R267 | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| R273 | 1-216-049-11 | RES-CHIP | 1K | 5% | 1/10W |
| | | < RELAY > | | | |
| RY101 | 1-755-184-11 | RELAY | | | |
| RY102 | 1-755-184-11 | RELAY | | | |
| | | < SWITCH > | | | |
| S101 | 1-692-989-11 | SWITCH, SLIDE (SCAN SELECT) | | | |

| Ref. No. | Part No. | Description |
|---|---|---|
| | 1-468-686-11 | POWER BLOCK (ZSSR107G) (US, CND) |

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(Ref. No. 6, 000 Series)

< FUSE >

| Ref. No. | Part No. | Description |
|---|---|---|
| ⚠F101 | 9-885-025-02 | FUSE (2A/250V) |
| ⚠IP201 | 9-885-025-05 | FUSE (1A/125V) |
| ⚠IP401 | 9-885-025-04 | FUSE (1.6A/125V) |
| ⚠IP402 | 9-885-025-03 | FUSE (2A/125V) |
| ⚠IP501 | 9-885-025-05 | FUSE (1A/125V) |

| Ref. No. | Part No. | Description |
|---|---|---|
| | 1-468-687-11 | POWER BLOCK (ZSSR107H) (AEP, UK, KR) |

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(Ref. No. 7, 000 Series)

< FUSE >

| Ref. No. | Part No. | Description |
|---|---|---|
| F101 | 9-885-028-42 | FUSE (2A/250V) |
| IP201 | 9-885-025-05 | FUSE (1A/125V) |
| IP401 | 9-885-025-04 | FUSE (1.6A/125V) |
| IP402 | 9-885-025-03 | FUSE (2A/125V) |
| IP501 | 9-885-025-05 | FUSE (1A/125V) |

MISCELLANEOUS

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| Ref. No. | Part No. | Description |
|---|---|---|
| 56 | 1-816-880-12 | INLET ASSY, AC (US, CND) |
| 56 | 1-816-880-22 | INLET ASSY, AC (AEP, UK, KR) |
| 103 | 1-468-686-11 | POWER BLOCK (US, CND) |
| 103 | 1-468-687-11 | POWER BLOCK (AEP, UK, KR) |
| 163 | 1-757-068-12 | CABLE, FLEXIBLE FLAT (FCM-13) |
| ⚠164 | A-6062-709-A | SERVICE ASSY, KHM-270AAA |
| M501 | 1-763-397-21 | MOTOR, DC (RF-300FA-12350) |
| ⚠T901 | 1-437-496-21 | TRANSFORMER, POWER (US, CND) |
| ⚠T901 | 1-437-497-21 | TRANSFORMER, POWER (AEP, UK, KR) |

| | |
|---|---|
| The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified. | Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié. |

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| | | ************** | |
| | | HARDWARE LIST | |
| | | ************** | |
| #1 | 7-682-946-09 | SCREW +PSW 3X5 | |
| #3 | 7-682-548-09 | SCREW +B 3X8 | |
| #4 | 7-682-546-09 | SCREW +B 3X5 | |
| #5 | 7-624-102-04 | STOP RING 1.5, TYPE -E | |
| #6 | 7-627-852-38 | SCREW, PRECISION +P1.7X1.8TYPE3 | |

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| | | ACCESSORIES | |
| | | ************ | |
| | 1-477-327-11 | REMOTE COMMANDER (RMT-D150A) (US, CND, KR) | |
| | 1-477-327-31 | REMOTE COMMANDER (RMT-D150P) (AEP, UK) | |
| ⚠ | 1-551-631-61 | CORD, POWER (AEP) | |
| ⚠ | 1-551-812-41 | CORD, POWER (US, CND) | |
| | 1-575-795-81 | CORD, CONNECTION (STEREO AV CABLE 1.5m) | |
| ⚠ | 1-824-532-11 | POWER-SUPPLY CORD (UK) | |
| ⚠ | 1-824-533-11 | POWER-SUPPLY CORD (KR) | |
| | 3-071-119-01 | COVER, BATTERY (for RMT-D150A/D150P) | |
| | 3-071-120-51 | DOOR, SLIDE (US, CND, KR) | |
| | 3-071-120-71 | DOOR, SLIDE (AEP, UK) | |
| | 3-077-160-11 | MANUAL, INSTRUCTION (ENGLISH) (US, CND) | |
| | 3-077-160-21 | MANUAL, INSTRUCTION (FRENCH) (US, CND) | |
| | 3-077-160-31 | MANUAL, INSTRUCTION (ENGLISH) (UK) | |
| | 3-077-160-41 | MANUAL, INSTRUCTION (FRENCH) (AEP) | |
| | 3-077-160-51 | MANUAL, INSTRUCTION (GERMAN) (AEP) | |
| | 3-077-160-61 | MANUAL, INSTRUCTION (ITALIAN) (AEP) | |
| | 3-077-160-71 | MANUAL, INSTRUCTION (DUTCH) (AEP) | |
| | 3-077-160-81 | MANUAL, INSTRUCTION (SPANISH) (AEP) | |
| | 3-077-160-91 | MANUAL, INSTRUCTION (PORTUGUESE) (AEP) | |
| | 3-077-161-11 | MANUAL, INSTRUCTION (KOREAN) (KR) | |

| | |
|---|---|
| The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified. | Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.<br>Ne les remplacer que par une pièce portant le numéro spécifié. |

9-929-732-11

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**Home Video Campany**

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